

City of Universal City

Universal City,
Texas



Standard Drawings for Public Works Construction

December 2015

List of Standard Drawings

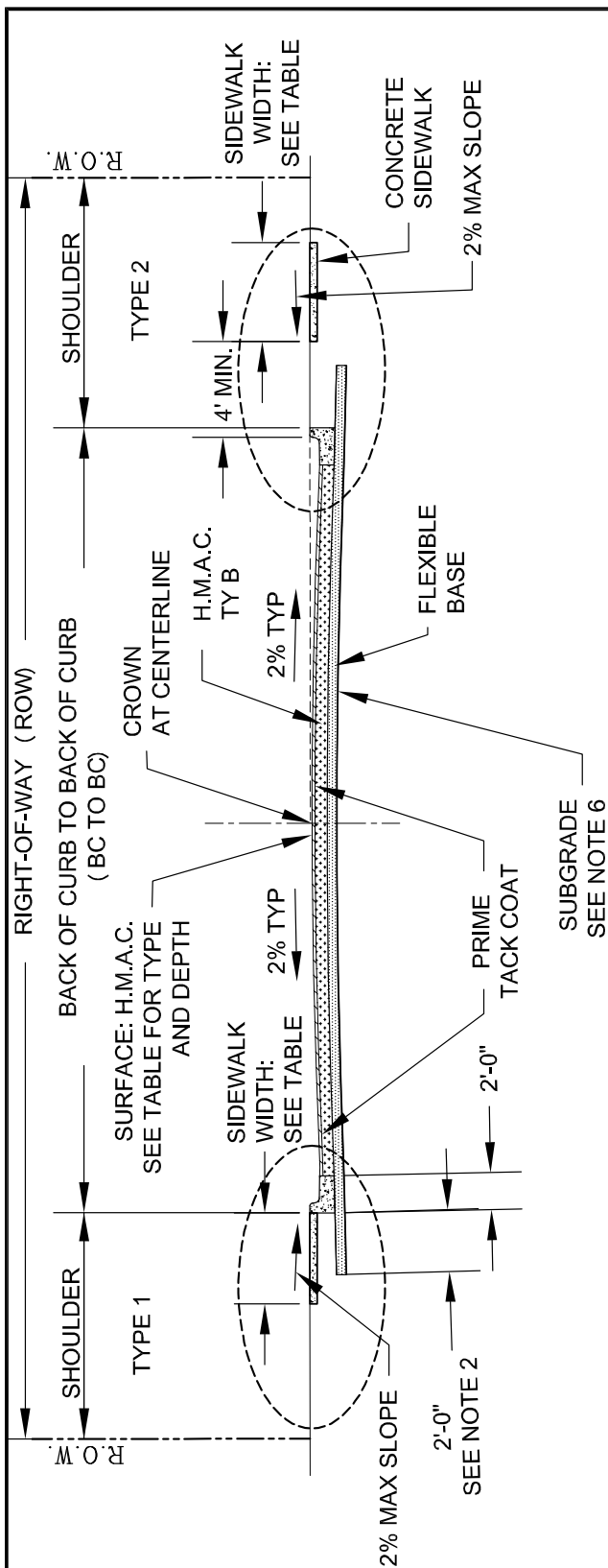
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Street Details

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TYPICAL STREET SECTION

STREET SECTION NOTES:

1. ALL UNPAVED AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SODED OR SEEDED, AS INDICATED ON THE PLANS. 4-INCH MINIMUM OF TOP SOIL.
2. BASE COURSE TO EXTEND BEYOND CURB 2'-0".
3. 4-INCH MINIMUM THICKNESS OF BASE UNDER CURB.
4. CROWN IS PARABOLIC.
5. PAVEMENT THICKNESS SHOWN ARE MINIMUMS.
6. SUBGRADE SHALL BE EITHER LIME STABILIZED, CEMENT STABILIZED, OR MECHANICALLY STABILIZED WITH TENSAR TRIAX GEOGRID AS REQUIRED/RECOMMENDED BY GEOTECHNICAL ENGINEER.
7. CURB SECTION VARIES WITH STREET TYPE. SEE DET-302-01 FOR MORE INFORMATION.
8. FOR RESIDENTIAL STREET TYPE USE SIDEWALK TYPE 2. FOR ALL OTHERS USE TYPE 1, UNLESS OTHERWISE APPROVED.

STREET TYPE	ROW (FT)	BC TO BC (FT)	SHOULDER (FT)	SW WIDTH (FT)	CROWN (IN)	SURFACE (HMAC)	SURFACE (IN)	HMAC TY B (IN)	FLEX BASE (IN)
RESIDENTIAL	50.00	31.00	9.50	4.00	6.00				
RESIDENTIAL COLLECTOR	60.00	41.00	9.50	4.00	7.00	TY D	2.00	4.00	6.00
RESIDENTIAL COLLECTOR	70.00	49.00	10.50	4.00	7.00				
COMMERCIAL COLLECTOR	70.00	49.00	10.50	6.00	8.00				
INDUSTRIAL COLLECTOR	80.00	61.00	9.50	6.00	9.00				
INDUSTRIAL COLLECTOR	90.00	61.00	14.50	6.00	9.00				
PRIMARY COLLECTOR, 4 LANES	70.00	49.00	10.50	6.00	8.00				
PRIMARY COLLECTOR, 5 LANES	80.00	61.00	9.50	6.00	9.00	TY C	3.00	6.00	6.00
PRIMARY COLLECTOR, 5 LANES	90.00	61.00	14.50	6.00	9.00				
MINOR ARTERIAL, 4 LANES	70.00	52.00	9.00	6.00	8.00				
PRIMARY COLLECTOR, 5 LANES	80.00	65.00	7.50	6.00	9.00				
PRIMARY COLLECTOR, 5 LANES	90.00	65.00	12.50	6.00	9.00				



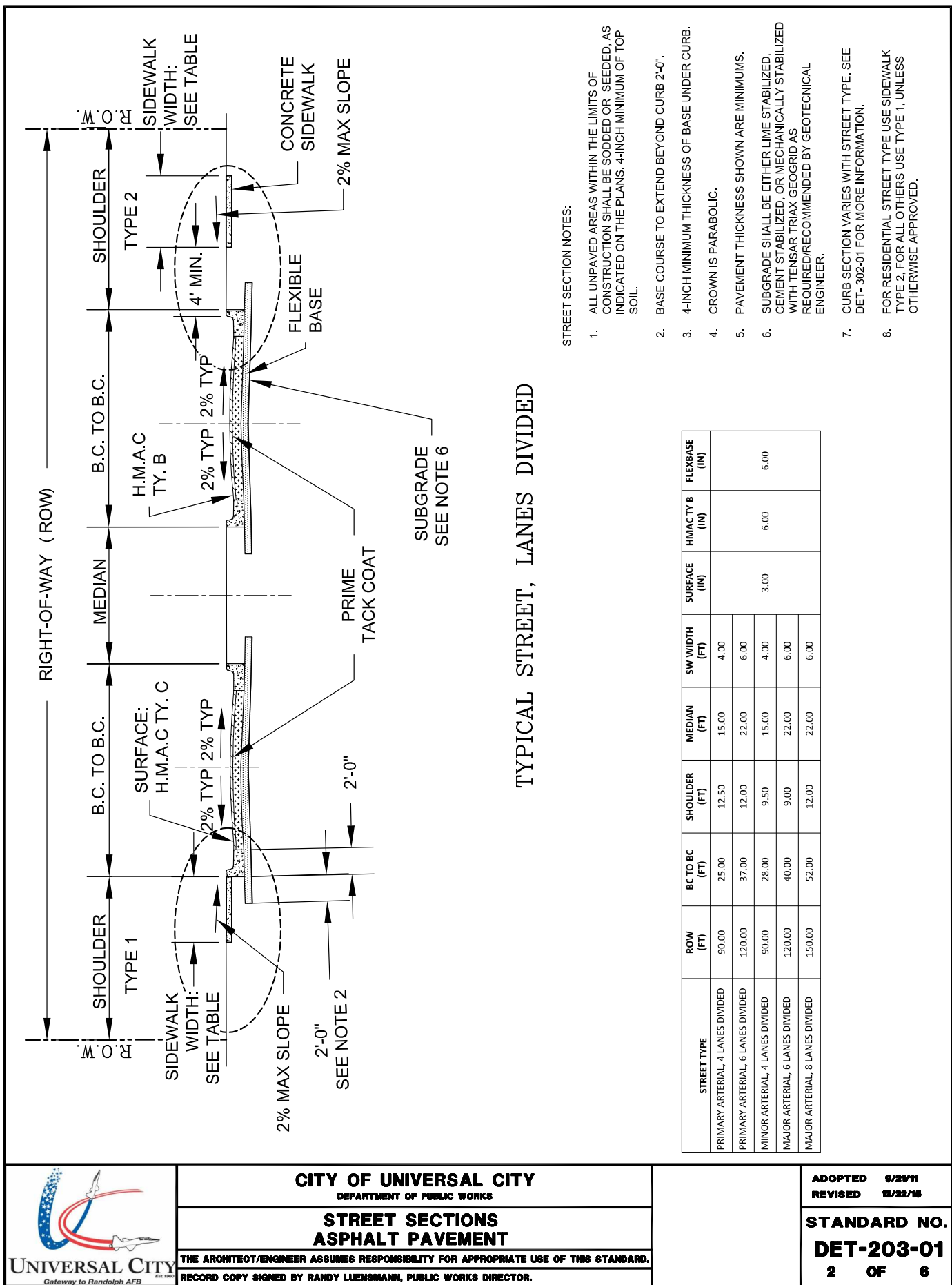
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

STREET SECTIONS ASPHALT PAVEMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 9/21/11
REVISED 12/22/16

STANDARD NO.
DET-203-01
1 OF 6



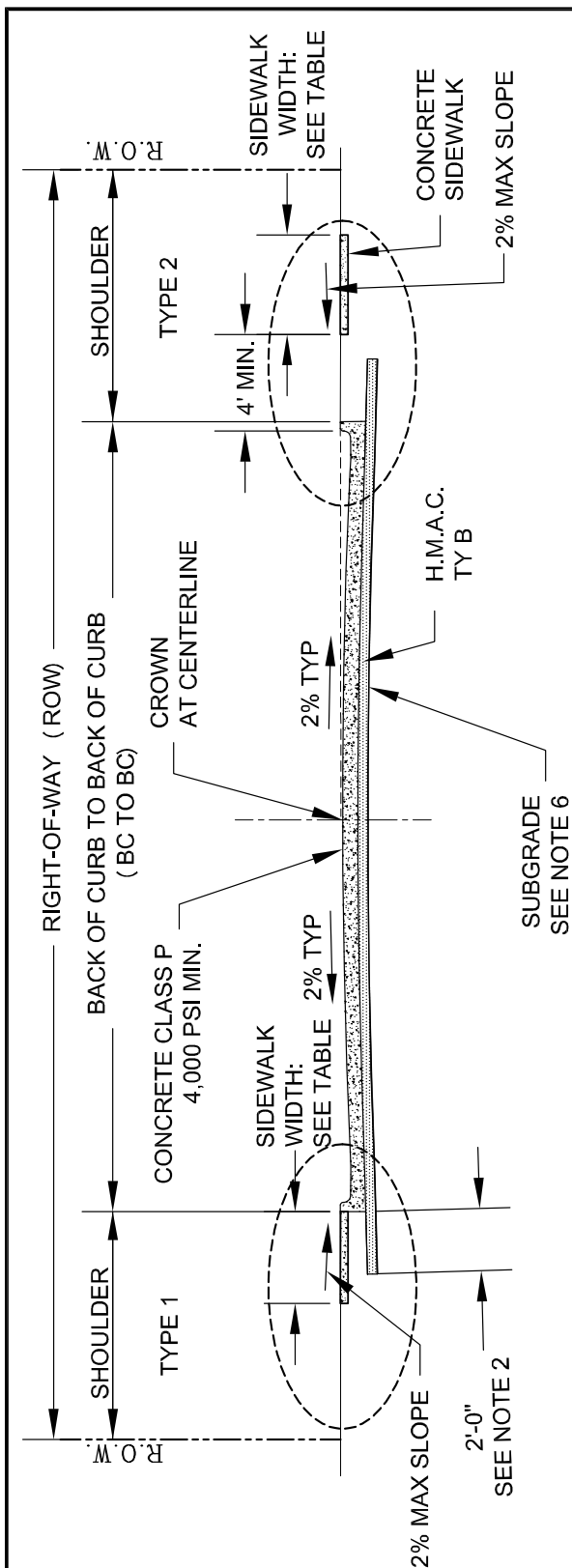
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STREET SECTIONS
ASPHALT PAVEMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 9/29/11
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STANDARD NO.
DET-203-01
 2 OF 6



TYPICAL STREET SECTION

STREET SECTION NOTES:

1. ALL UNPAVED AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SODDED OR SEEDDED, AS INDICATED ON THE PLANS. 4-INCH MINIMUM OF TOP SOIL.
2. BASE COURSE TO EXTEND BEYOND CURB 2'-0".
3. 4-INCH MINIMUM THICKNESS OF BASE UNDER CURB.
4. CROWN IS PARABOLIC.
5. PAVEMENT THICKNESS SHOWN ARE MINIMUMS.
6. SUBGRADE SHALL BE EITHER LIME STABILIZED, CEMENT STABILIZED, OR MECHANICALLY STABILIZED WITH TENSAR TRIAX GEOGRID AS REQUIRED/RECOMMENDED BY GEOTECHNICAL ENGINEER.
7. CURB SHALL BE MONOLITHIC. FOR MORE INFORMATION SEE CURB DETAIL DET-203-01 SHEET 6 OF 6.
8. FOR RESIDENTIAL STREET TYPE USE SIDEWALK

STREET TYPE	ROW (FT)	BC TO BC (FT)	SHOULDER (FT)	SW WIDTH (FT)	CROWN (IN)	CONCRETE (IN)	HMACTY B (IN)
RESIDENTIAL	50.00	31.00	9.50	4.00	6.00		
RESIDENTIAL COLLECTOR	60.00	41.00	9.50	4.00	7.00	6.00	4.00
RESIDENTIAL COLLECTOR	70.00	49.00	10.50	4.00	7.00		
COMMERCIAL COLLECTOR	70.00	49.00	10.50	6.00	8.00		
INDUSTRIAL COLLECTOR	80.00	61.00	9.50	6.00	9.00		
INDUSTRIAL COLLECTOR	90.00	61.00	14.50	6.00	9.00		
PRIMARY COLLECTOR, 4 LANES	70.00	49.00	10.50	6.00	8.00		
PRIMARY COLLECTOR, 5 LANES	80.00	61.00	9.50	6.00	9.00	8.00	4.00
PRIMARY COLLECTOR, 5 LANES	90.00	61.00	14.50	6.00	9.00		
MINOR ARTERIAL, 4 LANES	70.00	52.00	9.00	6.00	8.00		
PRIMARY COLLECTOR, 5 LANES	80.00	65.00	7.50	6.00	9.00		
PRIMARY COLLECTOR, 5 LANES	90.00	65.00	12.50	6.00	9.00		



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DEPARTMENT OF PUBLIC WORKS

STREET SECTIONS CONCRETE PAVEMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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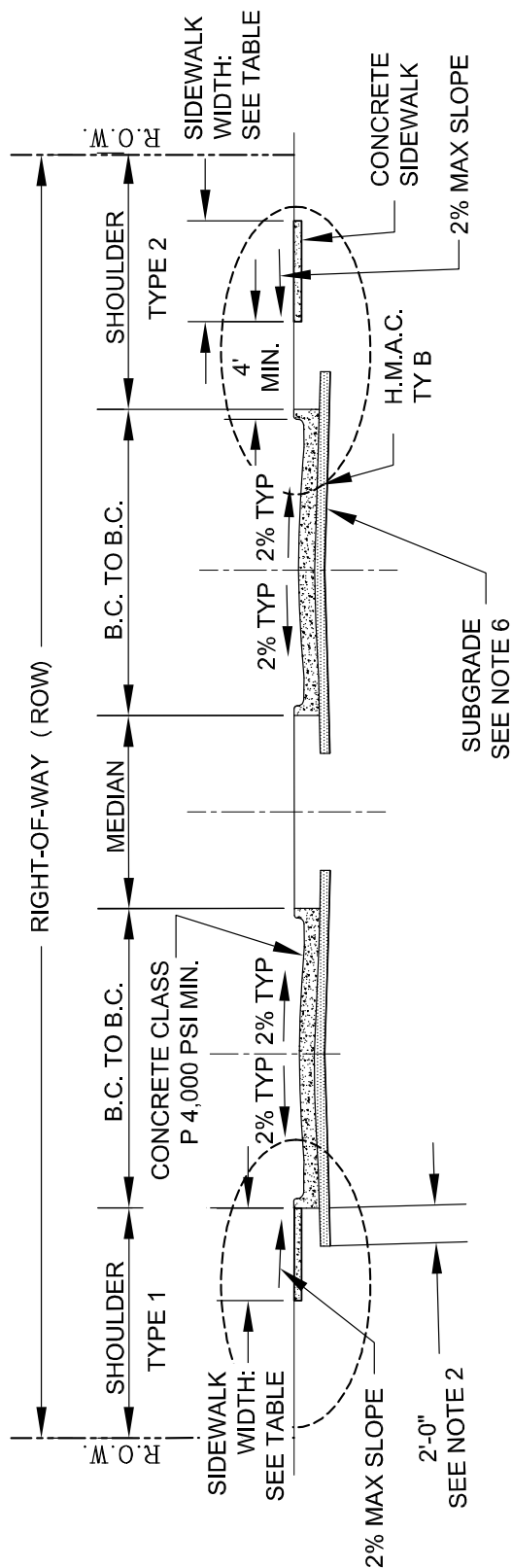
ADOPTED 9/21/11
REVISED 12/22/16

STANDARD NO.
DET-203-01
3 OF 6



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
STREET SECTIONS CONCRETE PAVEMENT	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
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ADOPTED 8/29/11 REVISED 12/22/16
STANDARD NO. DET-203-01 4 OF 6

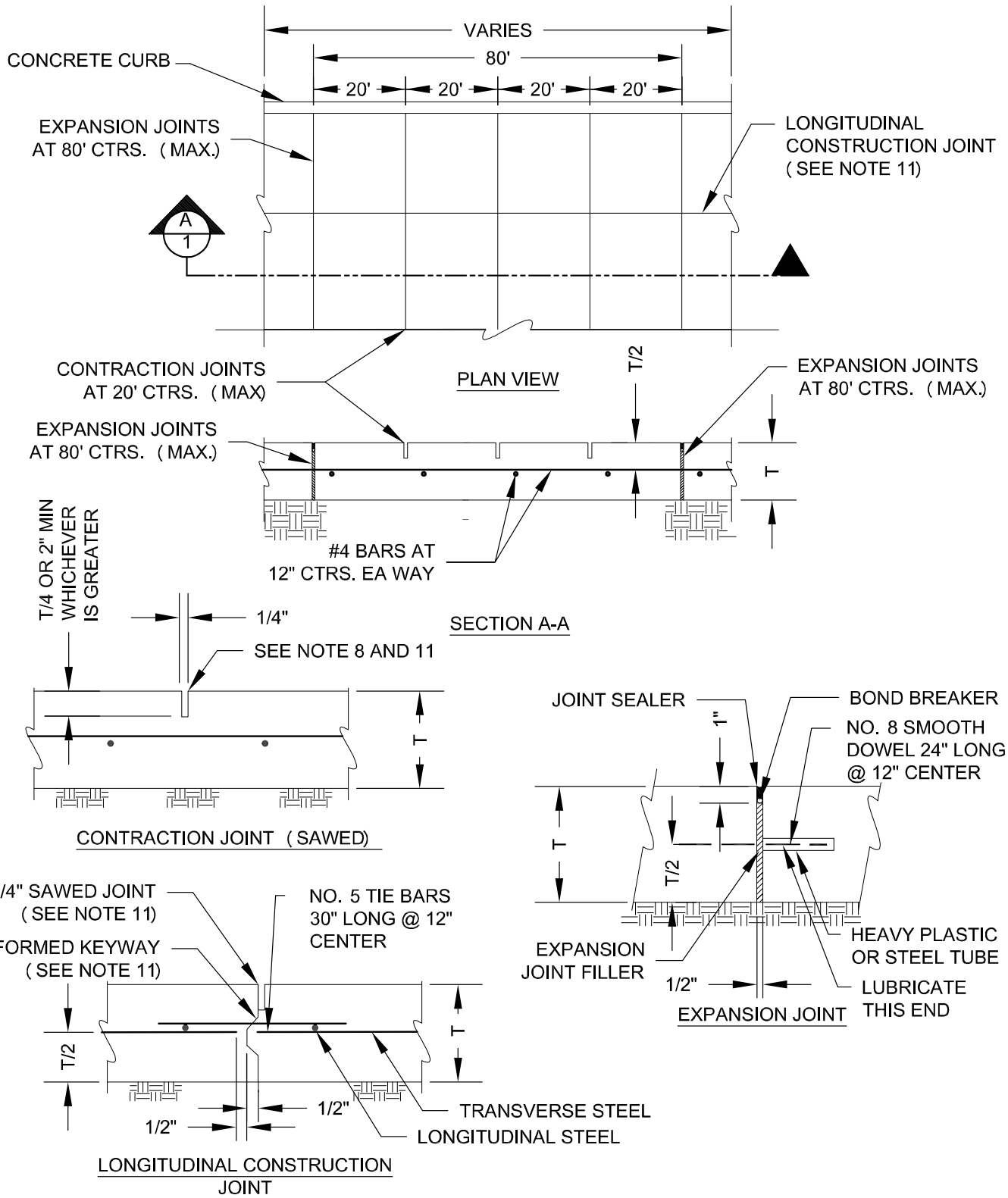


TYPICAL STREET, LANES DIVIDED

STREET SECTION NOTES:

1. ALL UNPAVED AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SODDED OR SEEDED, AS INDICATED ON THE PLANS. 4-INCH MINIMUM OF TOP SOIL.
2. BASE COURSE TO EXTEND BEYOND CURB 2'-0".
3. 4-INCH MINIMUM THICKNESS OF BASE UNDER CURB.
4. CROWN IS PARABOLIC.
5. PAVEMENT THICKNESS SHOWN ARE MINIMUMS.
6. SUBGRADE SHALL BE EITHER LIME STABILIZED, CEMENT STABILIZED, OR MECHANICALLY STABILIZED WITH TENSAR TRIAX GEOGRID AS REQUIRED/RECOMMENDED BY GEOTECHNICAL ENGINEER.
7. CURB SHALL BE MONOLITHIC. FOR MORE INFORMATION SEE CURB DETAIL DET-203-01 SHEET 6 OF 6.
8. FOR RESIDENTIAL STREET TYPE USE SIDEWALK

STREET TYPE	ROW (FT)	BC TO BC (FT)	SHOULDER (FT)	MEDIAN (FT)	SW WIDTH (FT)	CONCRETE (IN)	H.M.A.C. TY B (IN)
PRIMARY ARTERIAL - 4 LANES DIVIDED	90.00	25.00	12.50	15.00	4.00		
PRIMARY ARTERIAL - 6 LANES DIVIDED	120.00	37.00	12.00	22.00	6.00		
MINOR ARTERIAL - 4 LANES DIVIDED	90.00	28.00	9.50	15.00	4.00	8.00	4.00
MAJOR ARTERIAL - 6 LANES DIVIDED	120.00	40.00	9.00	22.00	6.00		
MAJOR ARTERIAL - 8 LANES DIVIDED	150.00	52.00	12.00	22.00	6.00		



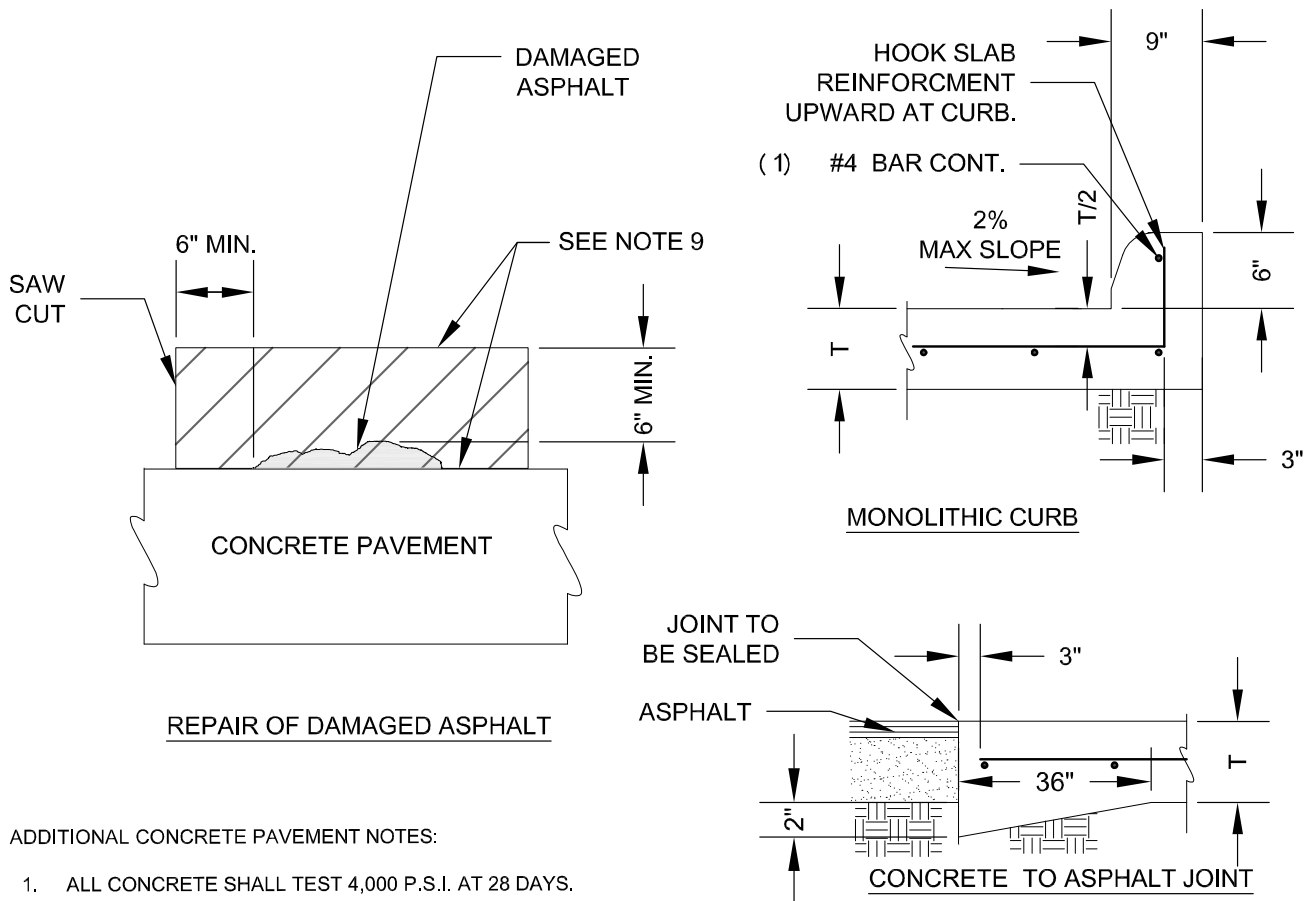
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

**STREET SECTIONS
CONCRETE PAVEMENT**

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 9/29/11
REVISED 12/22/15

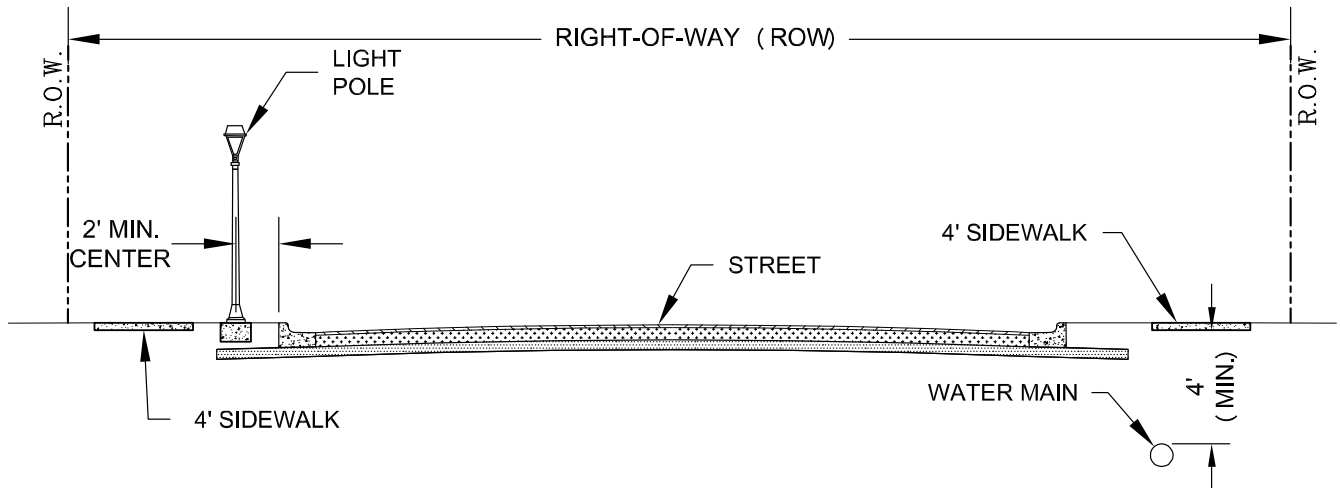
STANDARD NO.
DET-203-01
5 OF 6



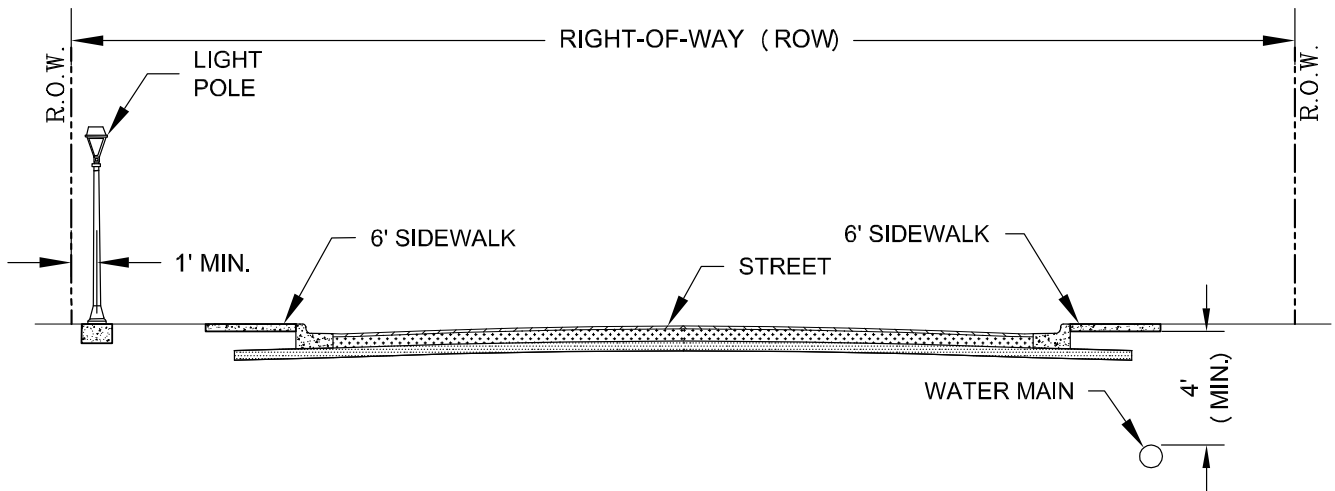
ADDITIONAL CONCRETE PAVEMENT NOTES:

1. ALL CONCRETE SHALL TEST 4,000 P.S.I. AT 28 DAYS.
2. CONCRETE PAVEMENT CONSTRUCTION SHALL BE PAID UNDER TXDOT ITEM 360 AT THE UNIT PRICE BID, WHICH PRICE SHALL BE FULL COMPENSATION FOR ALL DEMOLITION, REMOVAL OF EXISTING CURB, EXCAVATION, HAULING, CRUSHED LIMESTONE, REINFORCING STEEL, CONCRETE, CONCRETE CURB, JOINTS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
3. CONCRETE PAVEMENT AND CURB SHALL BE MONOLITHICALLY POURED. ALL EXISTING CURBING SHALL BE REMOVED AND REPLACED AS PER STANDARD DETAILS.
4. THE CONTRACTOR SHALL CONSTRUCT AN EXPANSION JOINT AT THE END OF EACH CURB RADIUS AND SPACED AT 80' MAX INTERVALS. NO DIRECT PAYMENT SHALL BE MADE FOR CONSTRUCTION OF AN EXPANSION JOINT.
5. ACTUAL CONCRETE PAVEMENT LENGTH AND WIDTH TO BE FIELD DETERMINED BY UC REPRESENTATIVE.
6. DO NOT DRIVE ON PAVEMENT UNTIL CONCRETE HAS REACHED A STRENGTH OF 2,800 P.S.I.
7. BREAK TEST CYLINDERS AS FOLLOWS:
 - 2 AT 3 DAYS
 - 2 AT 7 DAYS
 - 2 AT 28 DAYS
8. SAWCUT AS SOON AS THE CONCRETE IS STRONG ENOUGH TO SUPPORT THE SAWING EQUIPMENT AND TO PREVENT AGGREGATE RAVELING DURING THE SAWING OPERATION. ALL JOINTS SHOULD BE SAW CUT WITHIN 12 HOURS OF THE CONCRETE'S PLACEMENT. JOINTS SHALL BE FILLED WITH AN APPROVED ELASTIC TYPE MATERIAL AFTER SAW CUTTING.
9. REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT BY MATCHING EXISTING PAVEMENT SECTION. USE A MINIMUM 2" TYPE D HMA. NO DIRECT PAYMENT WILL BE MADE FOR SUCH REPAIRS.
10. "T" DIMENSION DEPENDS ON STREET TYPE. PAVEMENT THICKNESS SHOULD BE AS DIRECTED. SEE DET-203-01 , CONCRETE PAVEMENT TABLES FOR PAVEMENT THICKNESS.
11. SAWED JOINTS SHALL BE USED FOR LONGITUDINAL JOINTS WHEREVER MORE THAN ONE LANE WIDTH IS PLACED IN A SINGLE POUR. KEYED CONSTRUCTION JOINTS SHALL BE USED AT ALL OTHER JOINTS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 9/29/11 REVISED 12/22/15
	STREET SECTIONS CONCRETE PAVEMENT		STANDARD NO. DET-203-01
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		6 OF 6
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RESIDENTIAL



COMMERCIAL

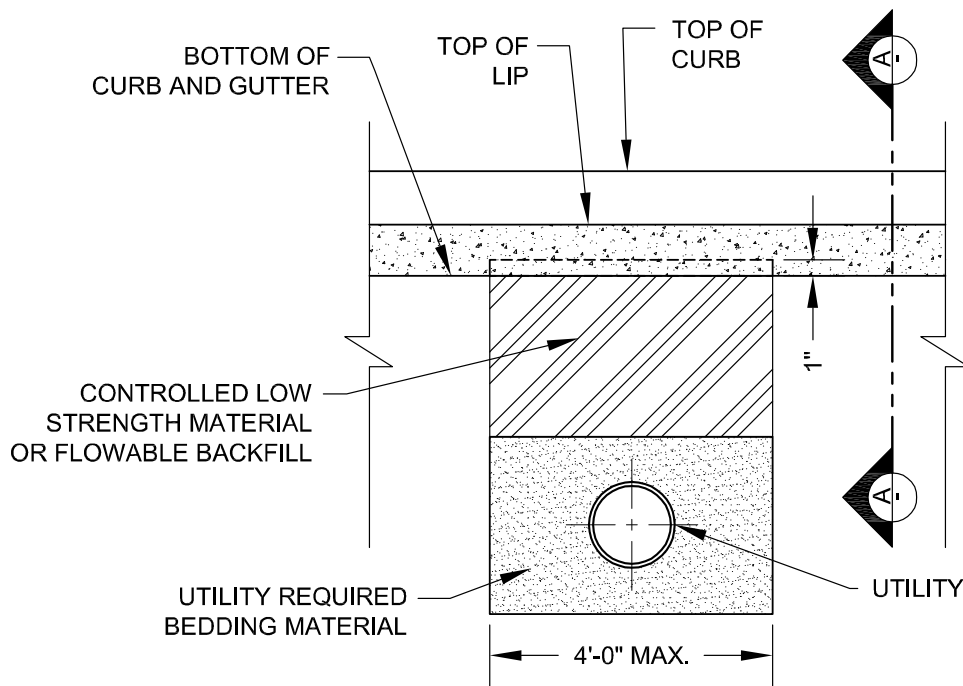
NOTES:

1. SEE DET-203-01, STREET SECTIONS, FOR STREET TYPE AND DIMENSIONS.
2. SET LIGHT POLES 2' FROM BACK OF CURB AND ON OPPOSITE SIDE OF WATER MAIN FOR RESIDENTIAL STREETS, OR AS DIRECTED.
3. SET LIGHT POLES 1' FROM R.O.W. AND ON OPPOSITE SIDE OF WATER MAIN FOR COMMERCIAL STREETS, OR AS DIRECTED.
4. FOLLOW LIGHT POLE DETAIL LOCATION AS PROVIDED ON THE PLANS.

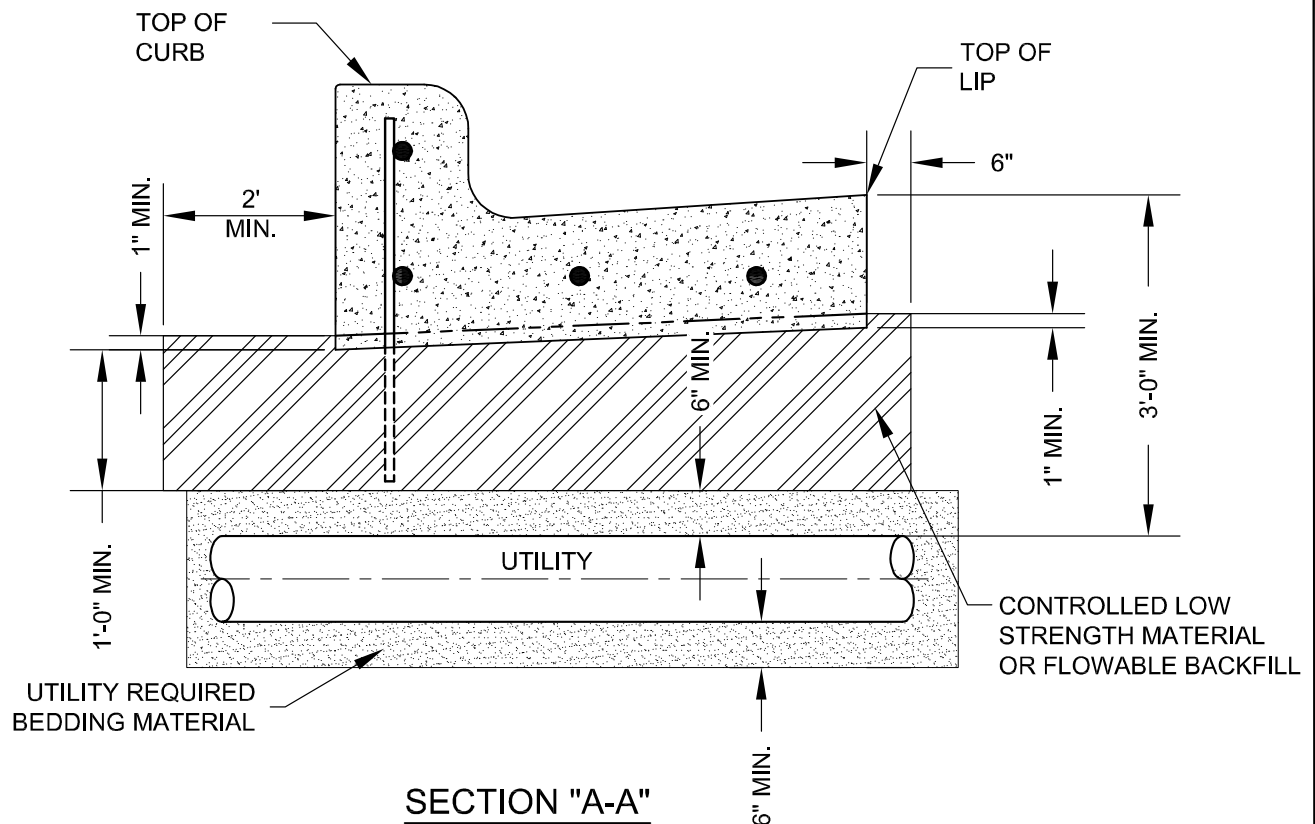


CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
CPS STREET LIGHT POLE PLACEMENT	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 12/22/15 REVISED 12/22/15	STANDARD NO. DET-204-01 1 OF 1
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ELEVATION VIEW



SECTION "A-A"



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

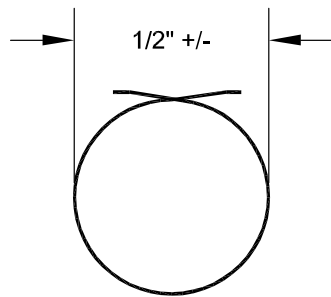
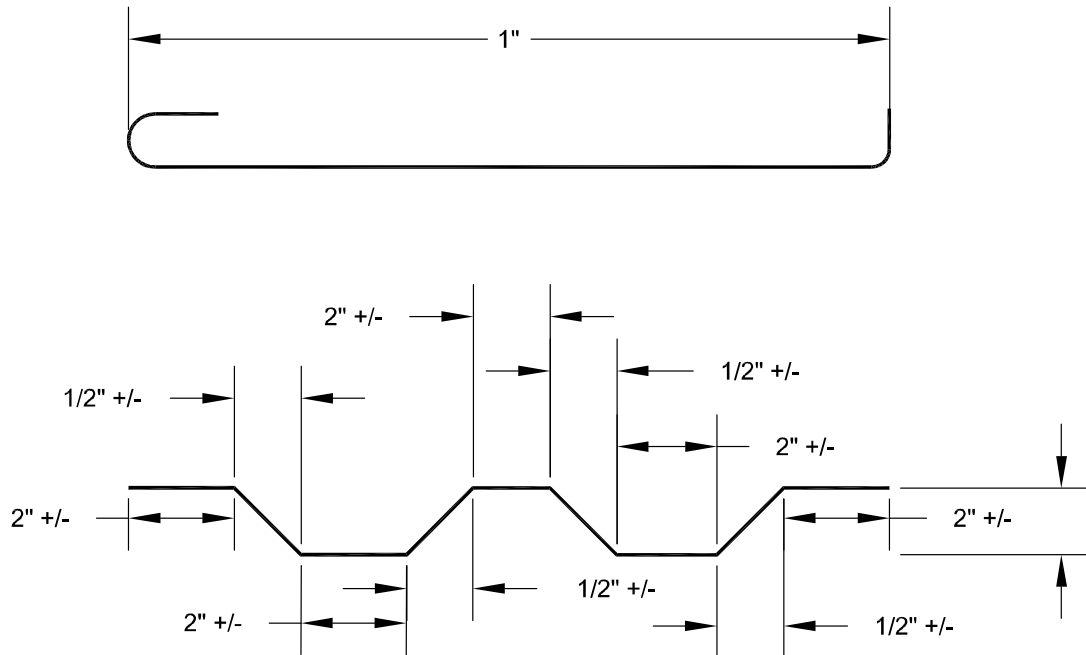
CONCRETE BACKFILL UNDER CURB AND GUTTER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

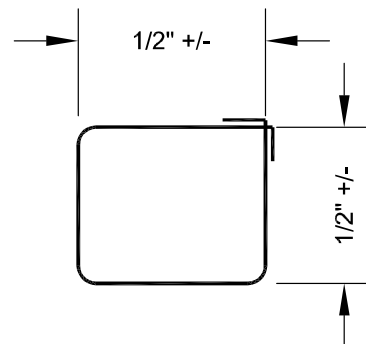
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ADOPTED 9/12/11
REVISED 12/8/15

STANDARD NO.
DET-300-01
1 OF 1



SPIRAL OR
CIRCULAR TIE



STIRRUP OR TIE

+0, -1/4" IF 6" OR LESS
+0, -1/2" IF OVER 6"

NOTES:

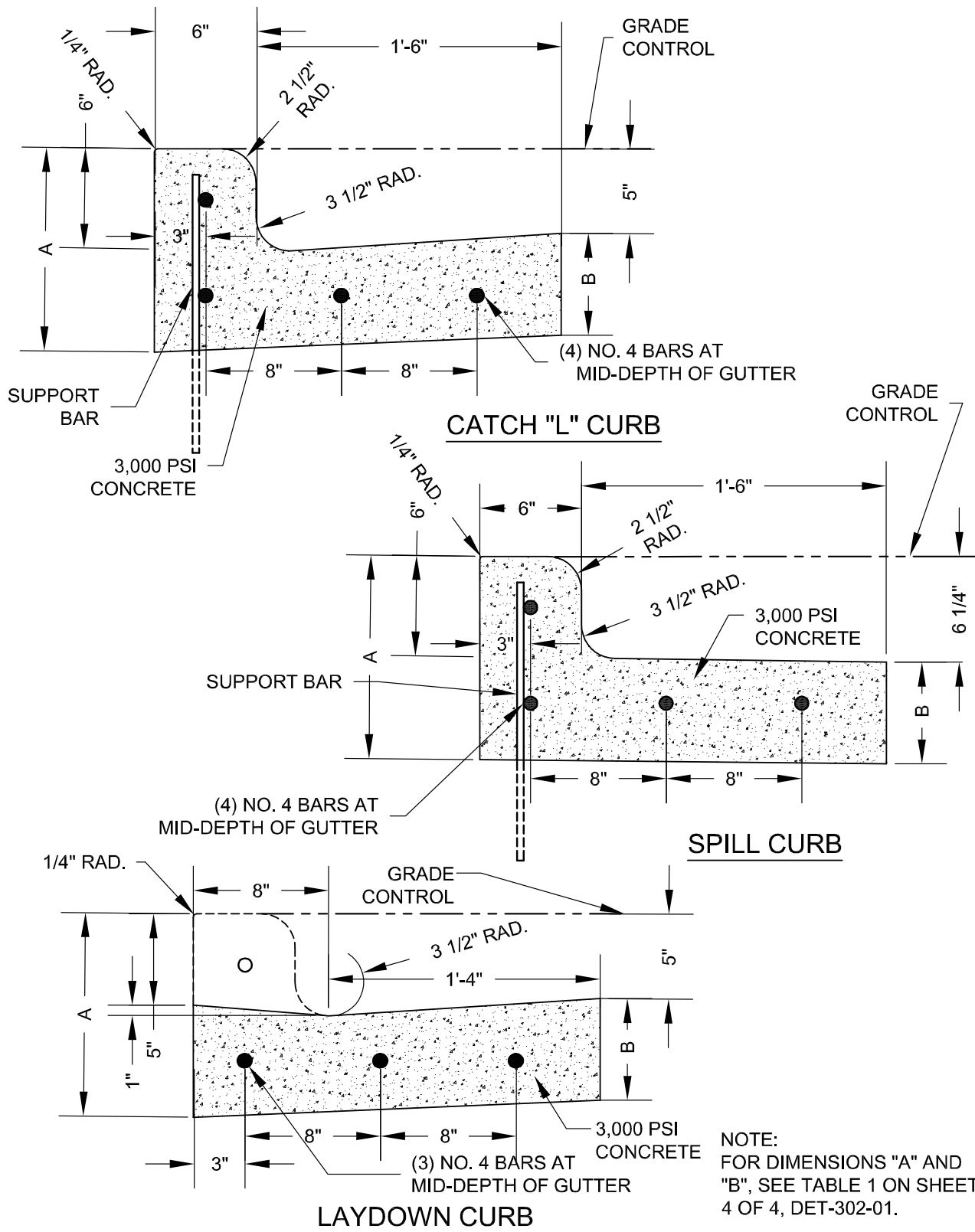
1. FABRICATING TOLERANCES FOR BARS, FROM PLAN CENTERLINE DIMENSIONS SHALL NOT BE GREATER THAN SHOWN.



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
REINFORCED STEEL TOLERANCES	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
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ADOPTED 9/12/11
REVISED 6/15/15

STANDARD NO.
DET-301-01
1 OF 1



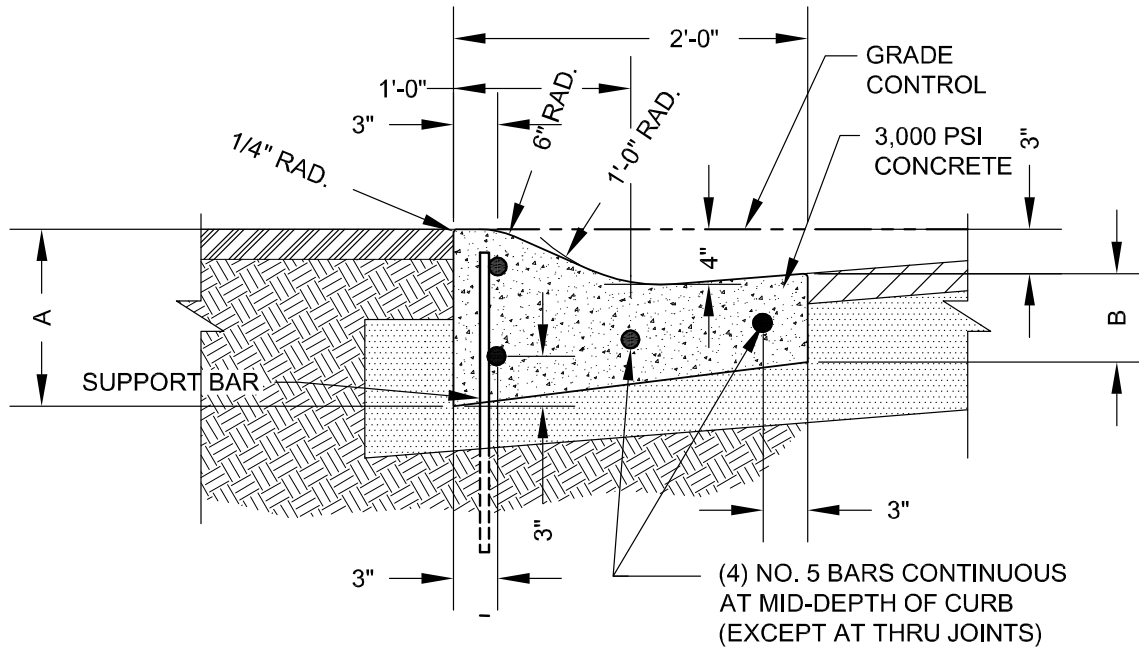
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DEPARTMENT OF PUBLIC WORKS

**CATCH 'L' CURB, SPILL CURB,
AND LAYDOWN CURB**

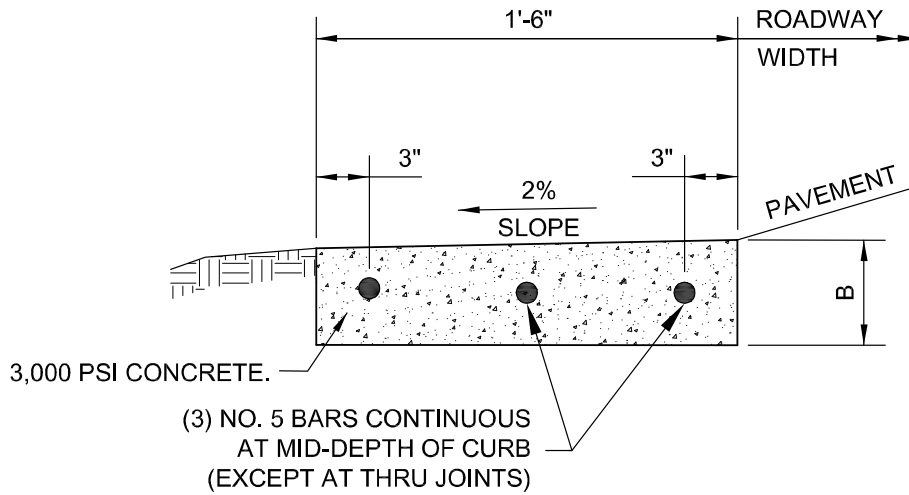
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ADOPTED 9/12/11
REVISED 12/4/15

STANDARD NO.
DET-302-01
1 OF 4



ROLL CURB



RIBBON CURB

NOTE:
FOR DIMENSIONS "A" AND
"B", SEE TABLE 1 ON SHEET
4 OF 4, DET-302-01.



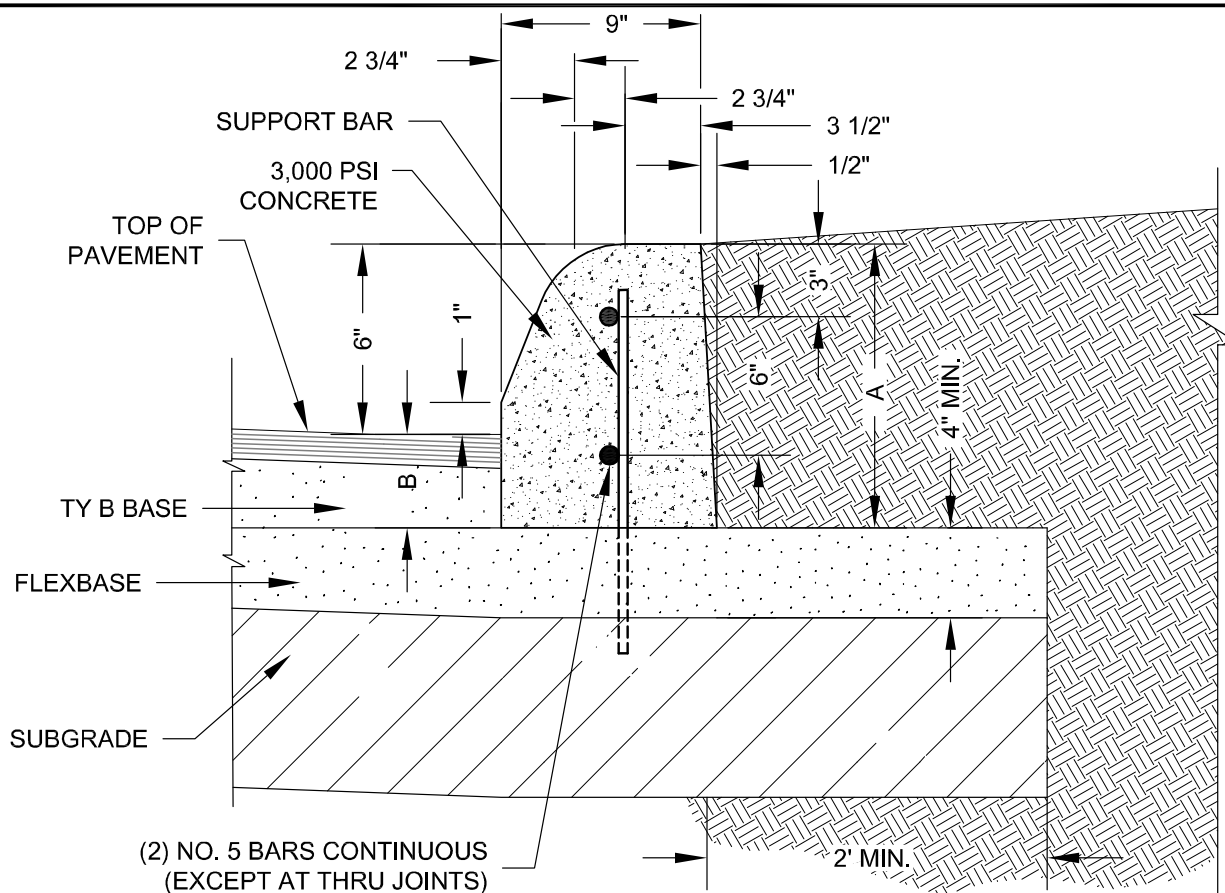
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ROLL CURB AND RIBBON CURB

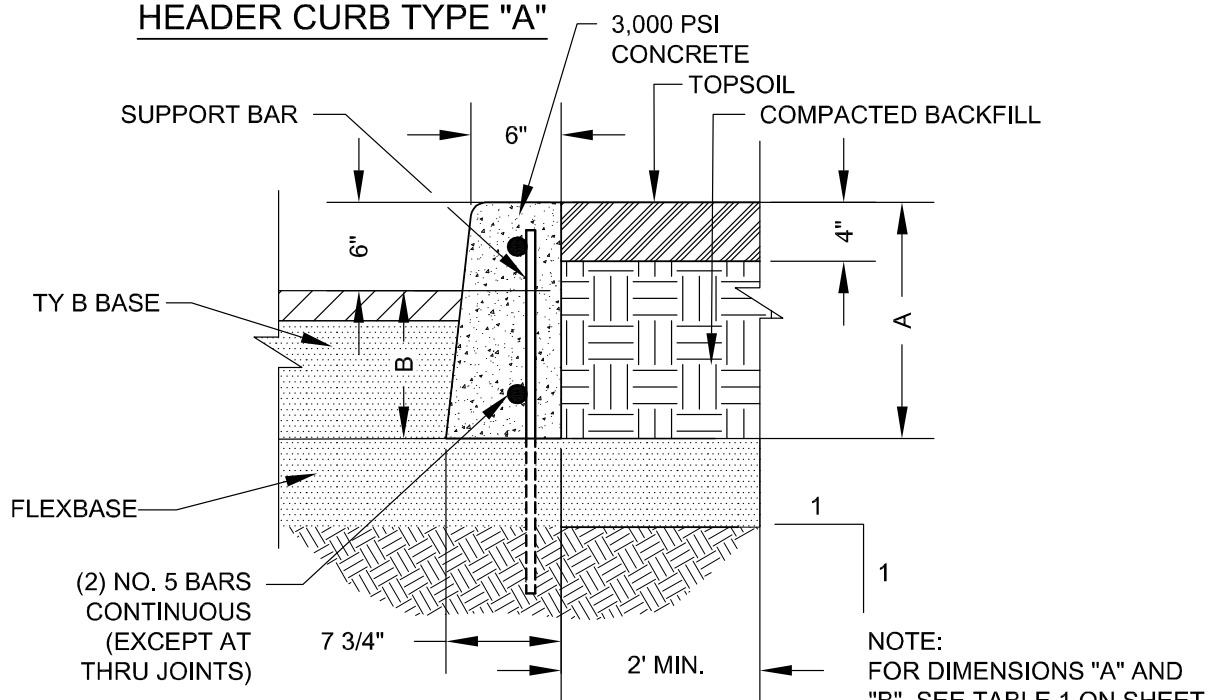
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 9/12/11
REVISED 12/4/15

STANDARD NO.
DET-302-01
2 OF 4



HEADER CURB TYPE "A"



HEADER CURB TYPE "B" (VERTICAL)



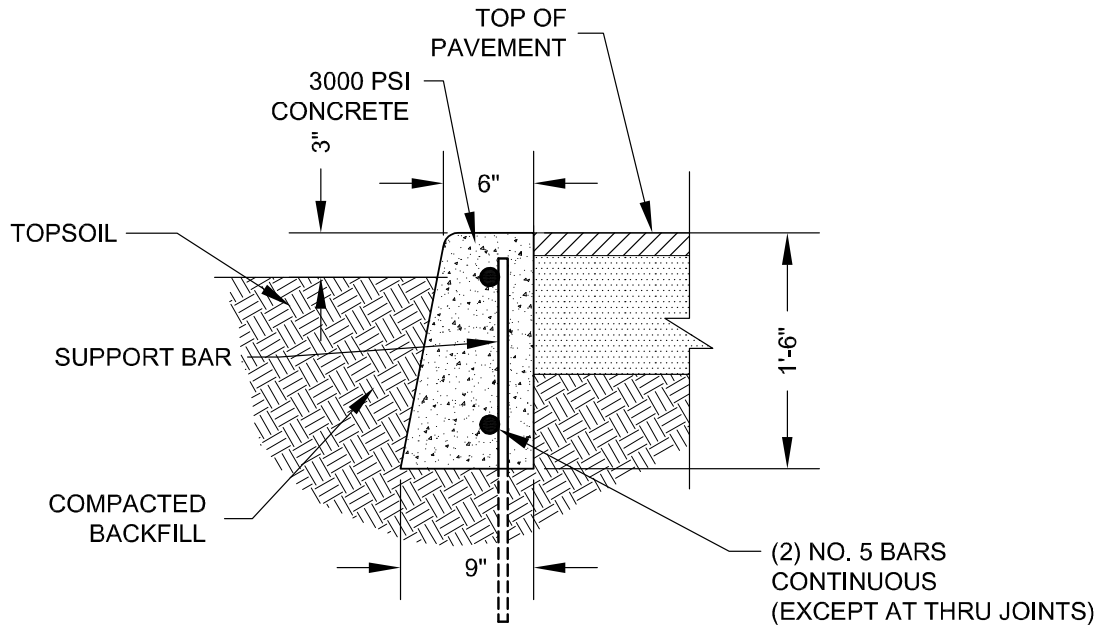
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

HEADER CURB TYPE 'A' AND TYPE 'B'

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED	9/12/11
REVISED	11/4/15

STANDARD NO.
DET-302-01
3 OF 4




HEADER CURB TYPE "C"

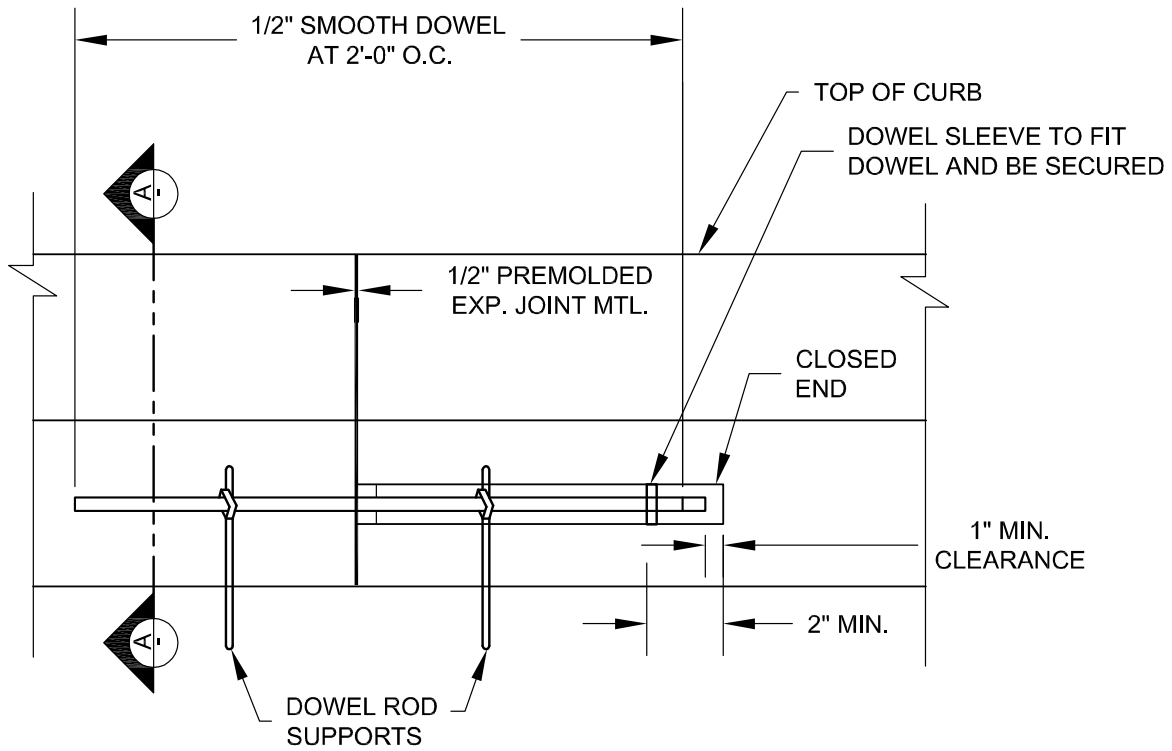
TABLE 1

STREET TYPE	A	B
RESIDENTIAL	1'-0"	0'-6"
RESIDENTIAL COLLECTOR		
COMMERCIAL COLLECTOR	1'-3"	0'-9"
INDUSTRIAL COLLECTOR		
PRIMARY COLLECTOR		
MINOR ARTERIAL		
MAJOR ARTERIAL		

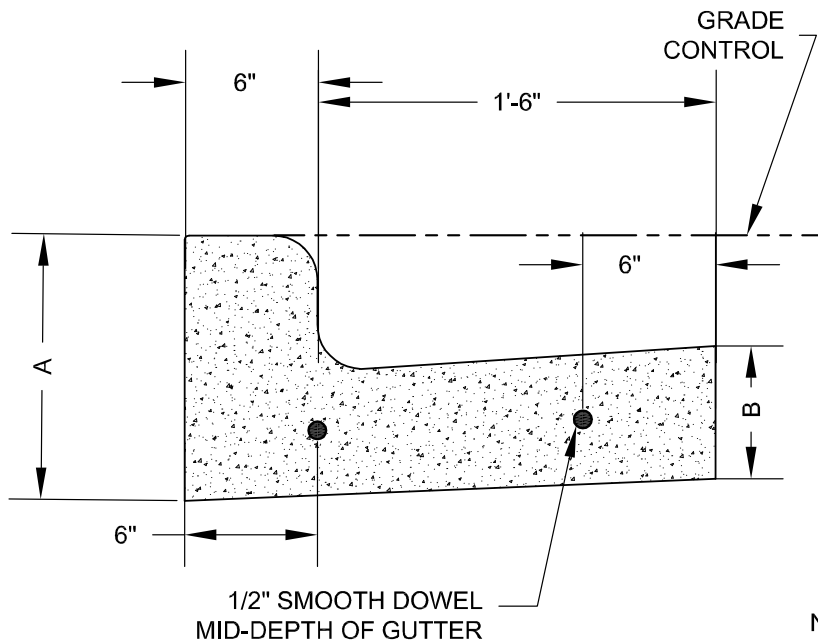
NOTES:

1. PROVIDE TOOLED JOINTS NOT TO EXCEED 15' ON CENTER AND NOT LESS THAN 10' ON CENTER.
2. PLACE FULL DEPTH THRU JOINTS WITH 1/2"x6" PREMOLDED JOINT FILLER AT POINTS OF TANGENCY AND AT 25' INTERVALS (MINIMUM).
3. EXPANSION JOINTS TO BE PLACED AT 40' CENTERS (MAXIMUM).
4. CONCRETE SHALL BE CLASS "A" 3,000 P.S.I. MINIMUM.
5. EXPANSION JOINT WITH DOWELS AND CAPS AT ALL P.T.'S AND P.C.'S SEE DET-302-04 FOR MORE INFORMATION

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 9/12/11 REVISED 9/3/15 STANDARD NO. DET-302-01 4 OF 4
	HEADER CURB TYPE 'C'		
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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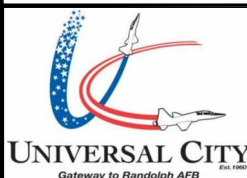


ELEVATION VIEW



SECTION "A-A"

NOTE:
FOR DIMENSIONS "A" AND
"B", SEE TABLE 1 ON SHEET
4 OF 4, DET-302-01.



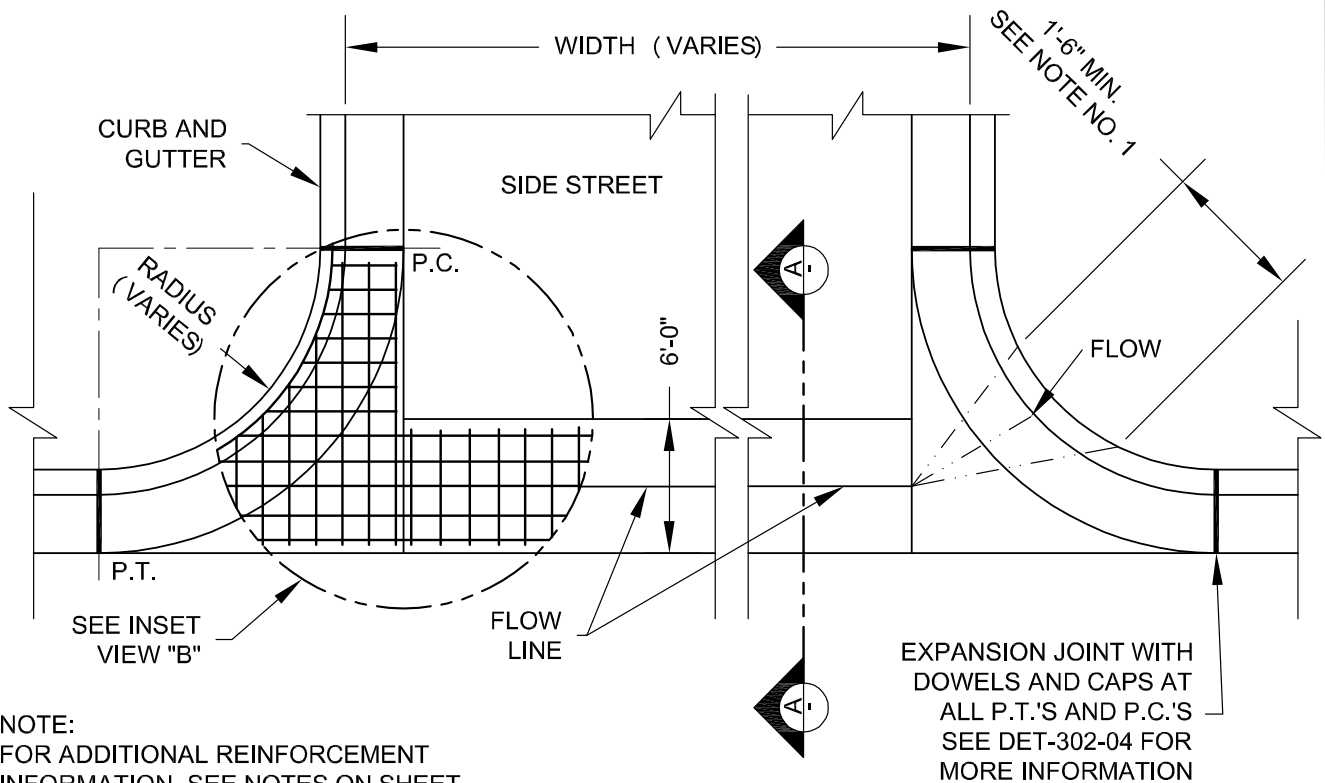
CITY OF UNIVERSAL CITY
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**CURB EXPANSION
JOINT AND DOWEL**

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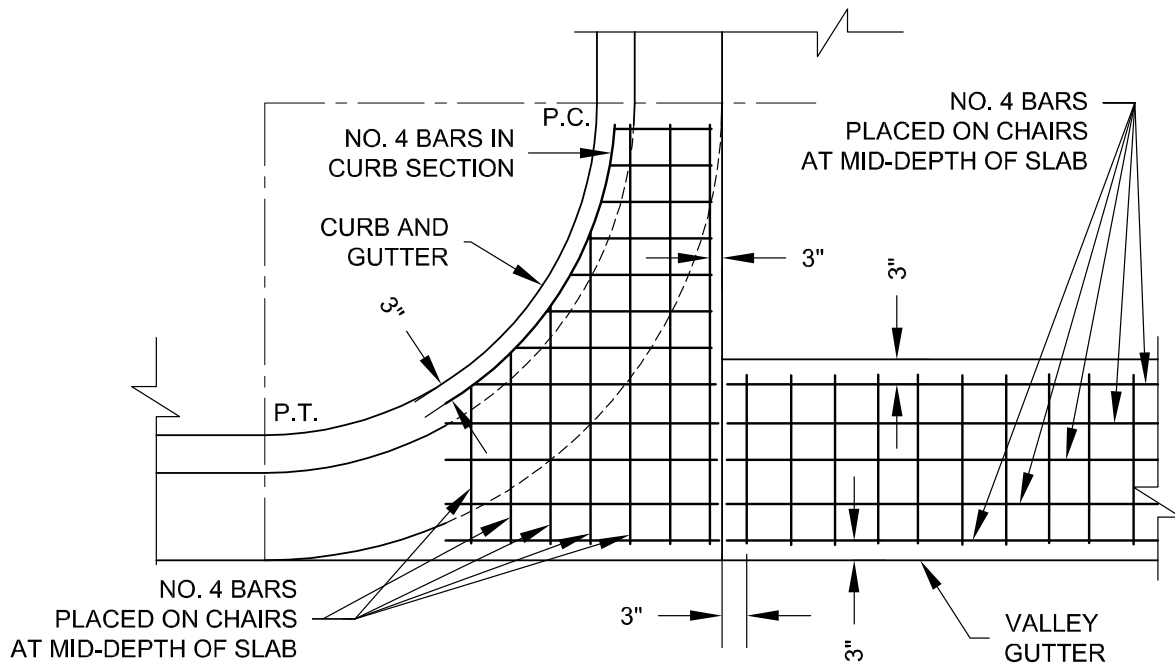
ADOPTED 9/18/11
REVISED 9/3/15

STANDARD NO.
DET-302-02
1 OF 1

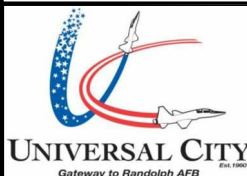


NOTE:
FOR ADDITIONAL REINFORCEMENT
INFORMATION, SEE NOTES ON SHEET
2 OF 2, DET-302-04.

PLAN VIEW



INSET VIEW "B"

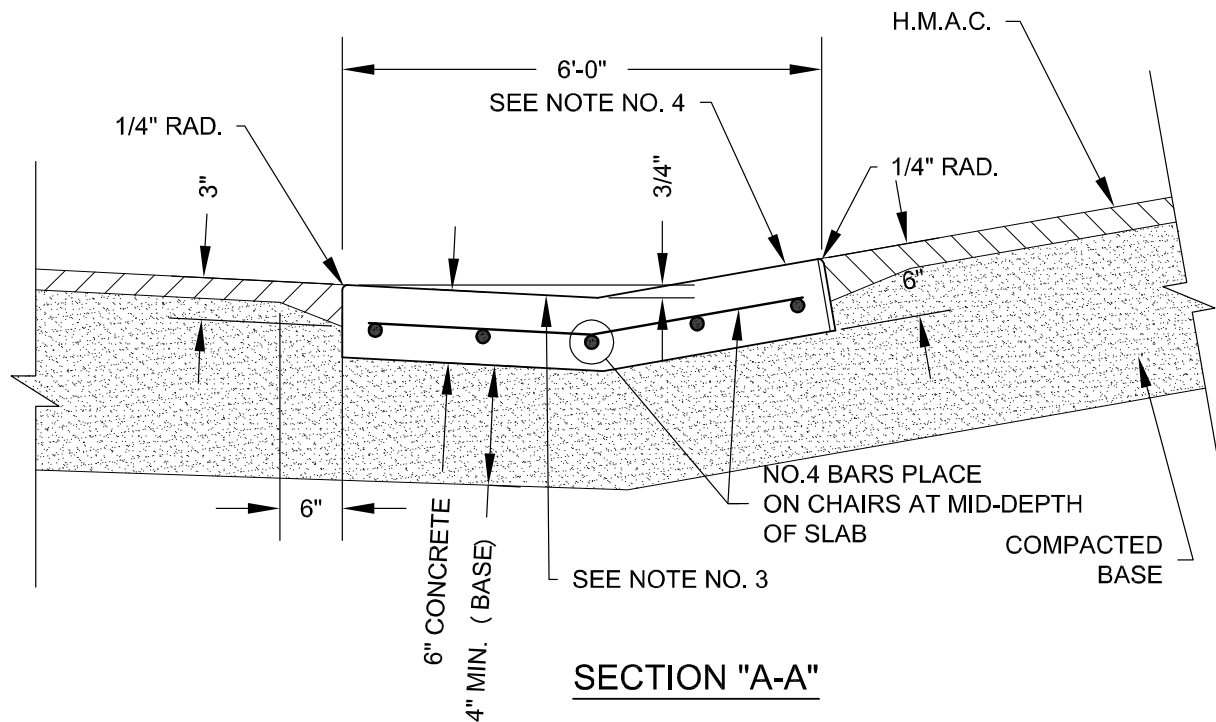


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
VALLEY GUTTER (CONCRETE)

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 9/18/11
REVISED 9/8/16

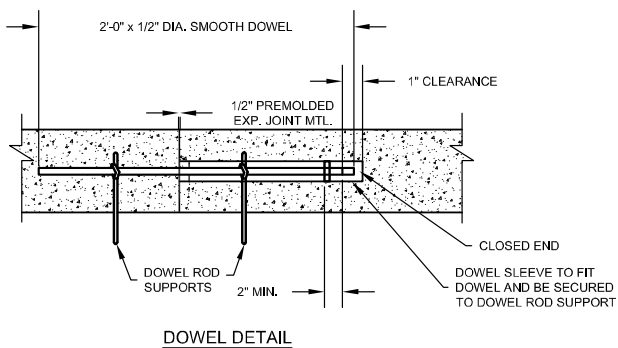
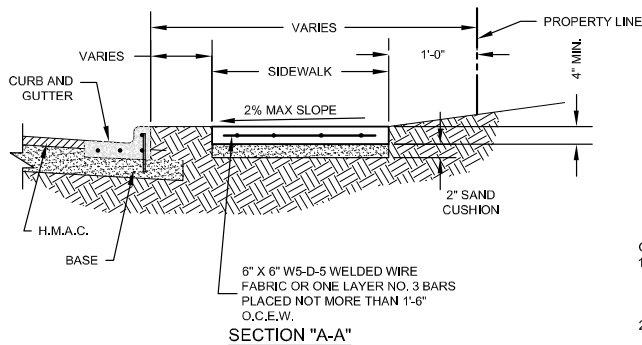
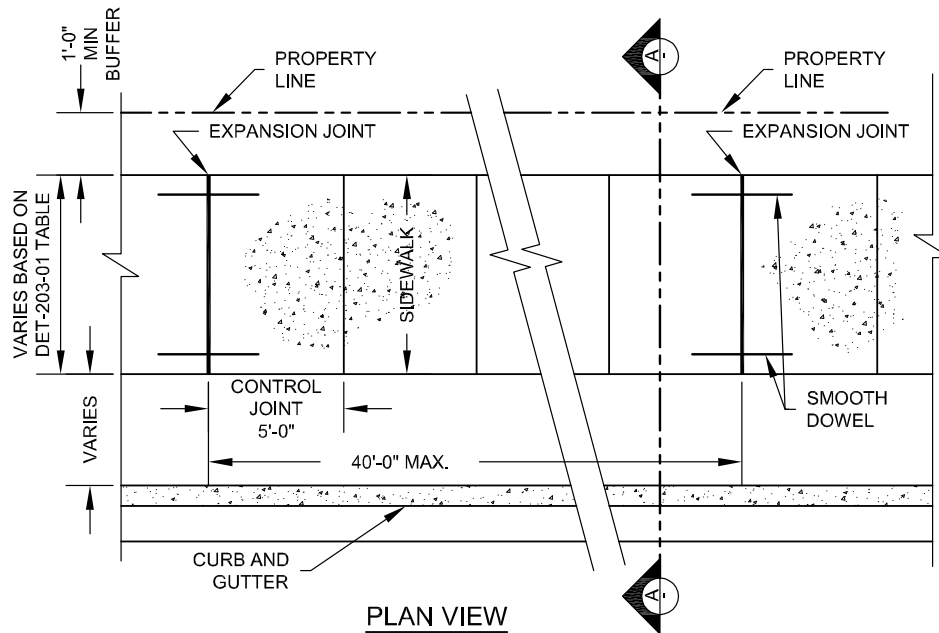
STANDARD NO.
DET-302-04
1 OF 2



NOTES:

1. UPSTREAM END OF GUTTER FORMED TO SPILL. DOWNSTREAM GUTTER FORMED TO CATCH.
2. NO. 4 BARS 18" O.C.E.W. PLACED ON CHAIRS AT MID-DEPTH OF SLAB.
3. SLOPE AT 2%.
4. ADJUST SLOPE FROM 2% TO THE SLOPE OF THE SIDE STREET.
5. MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE DEPARTMENT OF PUBLIC WORKS.
6. CONCRETE FOR THE VALLEY GUTTER SHALL BE CLASS "A", 3,000 P.S.I.
7. MONOLITHIC GUTTER SHALL BE MEASURED BY PLAN QUANTITY PER LINEAR FEET AND PAID AS VALLEY GUTTER.
8. THE UPSTREAM CURB MID POINT MUST BE AT OR LOWER THAN THE BEGINNING P.C. AND 0.5% MINIMUM HIGHER THAN THE OPPOSING MID POINT.
9. ALLOWABLE CONSTRUCTION JOINT AT THE CENTER LINE WHEN TRAFFIC FLOW MUST BE MAINTAINED, CONSTRUCTED AS A CONTROL JOINT.
10. FOR REINFORCEMENT AT JOINTS, SPACING OF BARS SHALL BE NOT LESS THEN 2'-0" AND NOT MORE THAN 3'-0". SEE DET-302-03 FOR MORE DETAILS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 9/18/11 REVISED 9/8/16
	VALLEY GUTTER (CONCRETE)		STANDARD NO. DET-302-04
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		2 OF 2



GENERAL NOTES:

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
3. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" X 6" - W5-D5 WIRE MESH.
4. REINFORCEMENT SHALL ACCURATELY BE PLACED AT SLAB MID-DEPTH AND REQUIRE CHAIRS OR PAVERS TO ADEQUATELY SUPPORT THE REINFORCING STEEL WITHOUT DISPLACEMENT AND IN THE PROPER POSITION DURING THE PLACEMENT OF THE CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.
5. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
6. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. SIDEWALK LONGITUDINAL SLOPE SHALL NOT EXCEED 5% MAXIMUM SLOPE, UNLESS ADJACENT TO AN EXISTING STREET WITH A GRADE IN EXCESS OF 5%.
7. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33- (-2.67) =11) . IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
8. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
9. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.
10. CONCRETE TO HAVE A MINIMUM STRENGTH OF 3,000 PSI CLASS "A".
11. SUBGRADE PREPARATION, SHAPE AND COMPACT SUBGRADE TO THE LINE, GRADE, AND CROSS-SECTION SHOWN ON THE PLANS, BEFORE AND DURING COMPACTION, BRING THE SCARIFIED LAYER TO THE MOISTURE CONTENT DIRECTED, AND COMPACT UNTIL THERE IS NO EVIDENCE OF FURTHER CONSOLIDATION.
12. PLACING BASE MATERIAL, WHEN SHOWN ON THE PLANS, PLACE, SPREAD, AND COMPACT MATERIAL IN ACCORDANCE WITH THE APPLICABLE ITEM TO THE REQUIRED OR DIRECTED DEPTH.

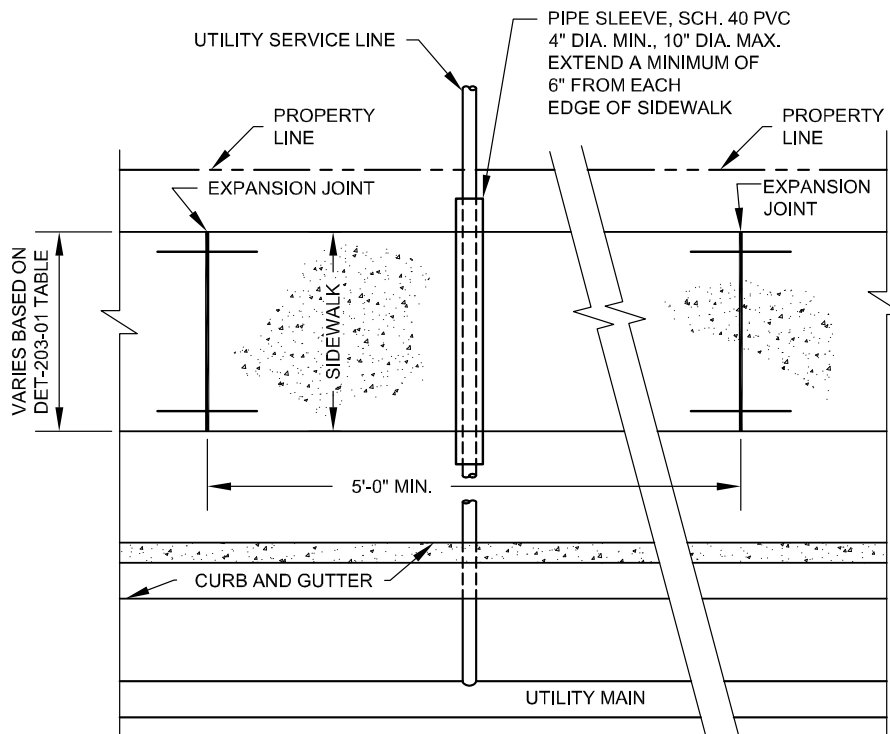


CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS SIDEWALK (CONCRETE)

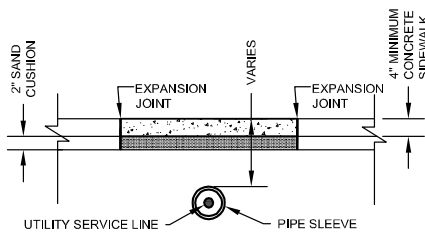
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ADOPTED 9/14/11
REVISED 12/4/15

STANDARD NO.
DET-302-05
1 OF 2



SIDEWALK OVER UTILITY SERVICE LINE PLAN



**SECTION OF
SIDEWALK OVER
UTILITY SERVICE LINE**

UTILITY NOTES

1. APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC SLEEVE.

GENERAL NOTES:

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
3. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" X 6" - W5-D5 WIRE MESH.
4. REINFORCEMENT SHALL ACCURATELY BE PLACED AT SLAB MID-DEPTH AND REQUIRE CHAIRS OR PAVERS TO ADEQUATELY SUPPORT THE REINFORCING STEEL WITHOUT DISPLACEMENT AND IN THE PROPER POSITION DURING THE PLACEMENT OF THE CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.
5. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
6. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. SIDEWALK LONGITUDINAL SLOPE SHALL NOT EXCEED 5% MAXIMUM SLOPE, UNLESS ADJACENT TO AN EXISTING STREET WITH A GRADE IN EXCESS OF 5%.
7. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. $8.33 - (-2.67) = 11$). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
8. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
9. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.
10. CONCRETE TO HAVE A MINIMUM STRENGTH OF 3,000 PSI CLASS "A".
11. SUBGRADE PREPARATION, SHAPE AND COMPACT SUBGRADE TO THE LINE, GRADE, AND CROSS-SECTION SHOWN ON THE PLANS, BEFORE AND DURING COMPACTION, BRING THE SCARIFIED LAYER TO THE MOISTURE CONTENT DIRECTED, AND COMPACT UNTIL THERE IS NO EVIDENCE OF FURTHER CONSOLIDATION.
12. PLACING BASE MATERIAL, WHEN SHOWN ON THE PLANS, PLACE, SPREAD, AND COMPACT MATERIAL IN ACCORDANCE WITH THE APPLICABLE ITEM TO THE REQUIRED OR DIRECTED DEPTH.



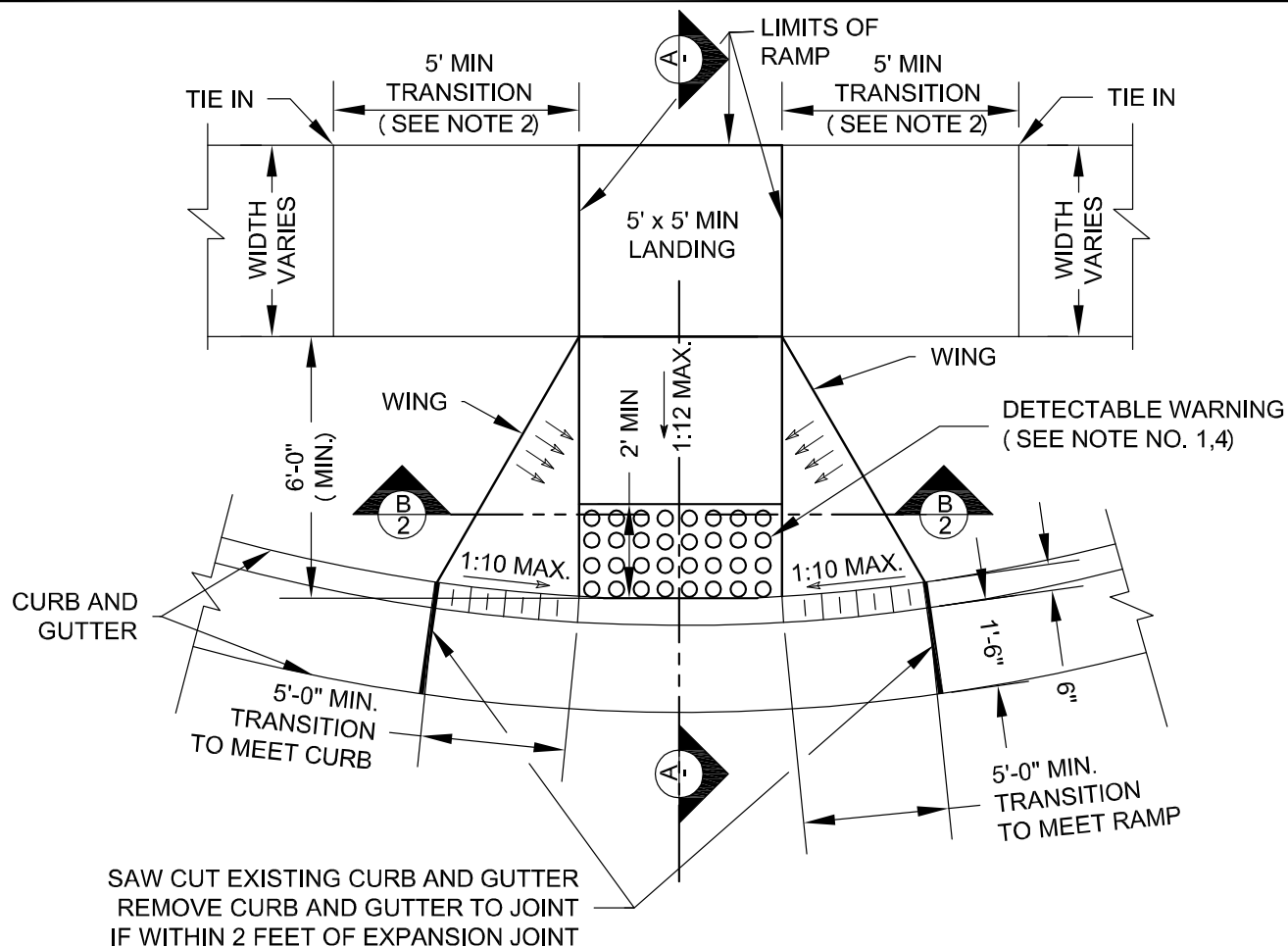
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

SIDEWALK (CONCRETE)

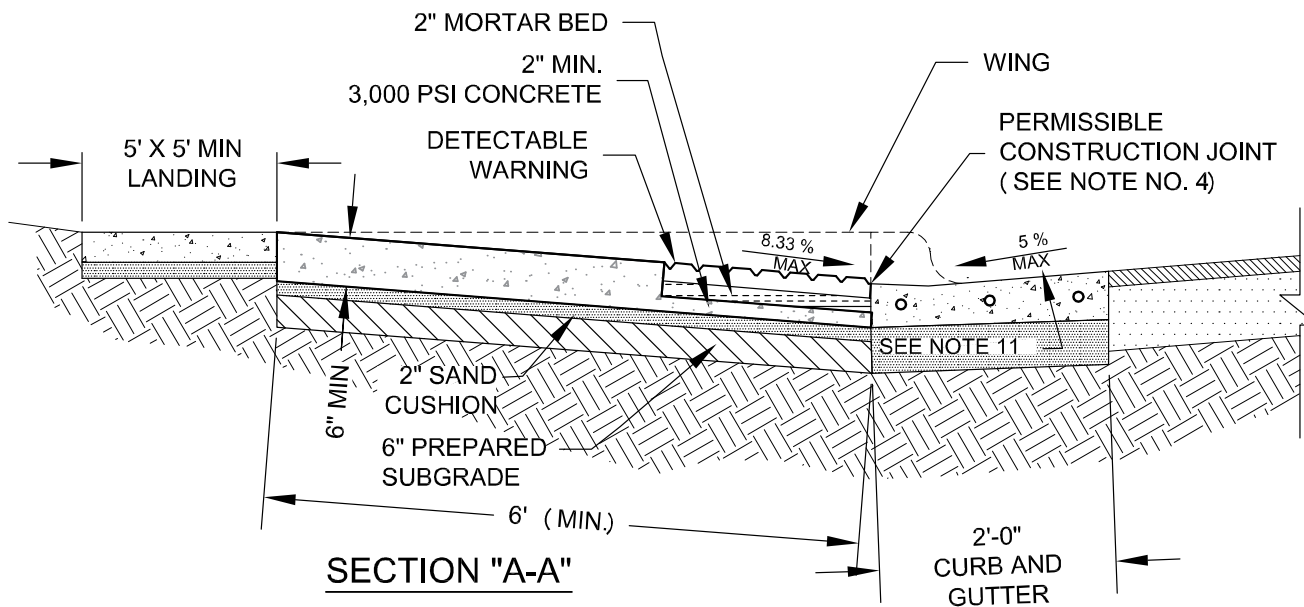
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ADOPTED 9/14/11
REVISED 12/4/15

STANDARD NO.
DET-302-05
2 OF 2



PLAN VIEW



SECTION "A-A"



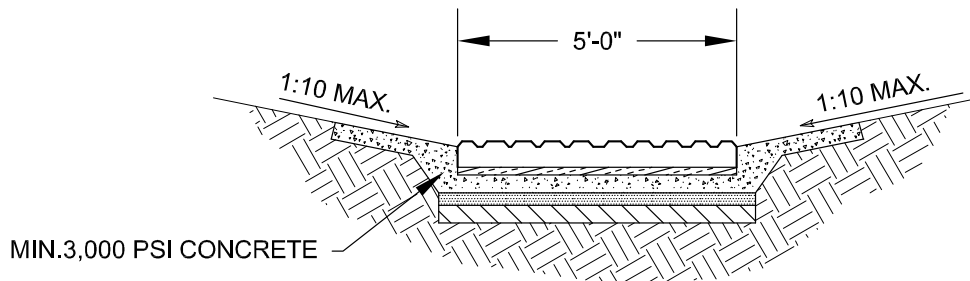
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

SIDEWALK CURB RAMP
(TYPE 1)

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ADOPTED 9/18/11
REVISED 11/17/18


STANDARD NO.
DET-302-06
1 OF 2

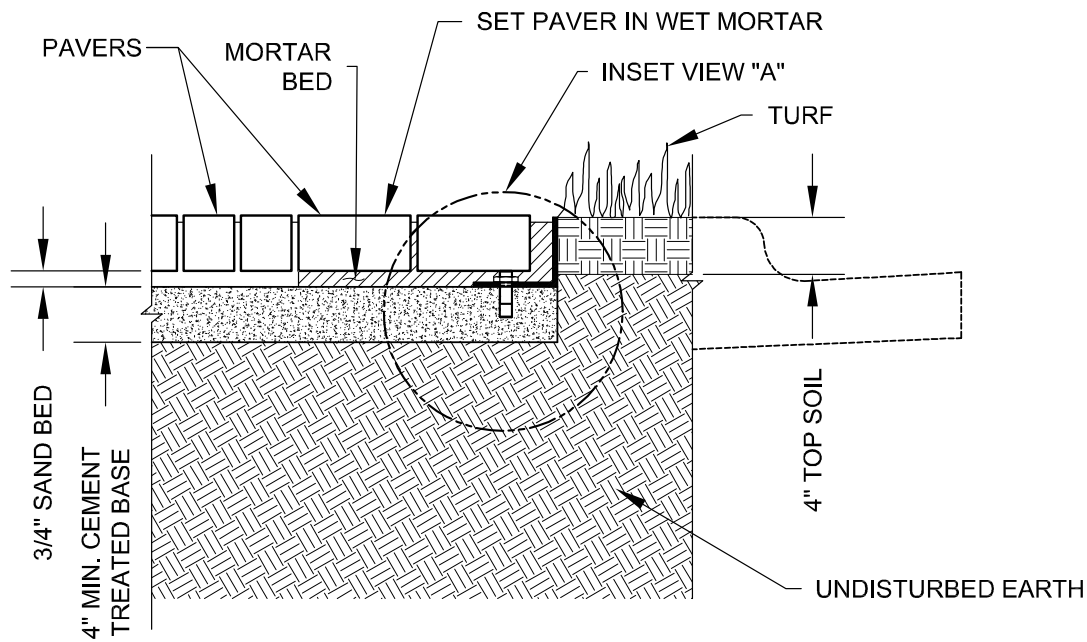


SECTION "B-B"

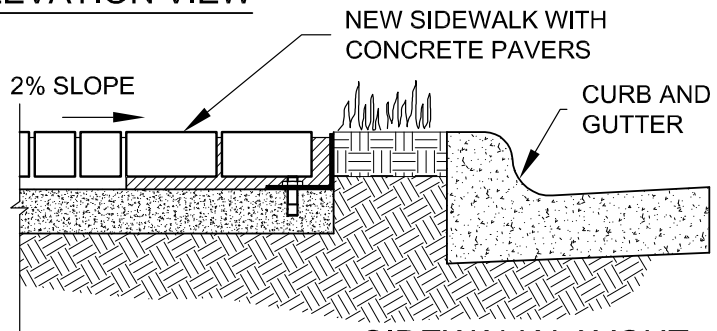
GENERAL NOTES:

1. SIDEWALK RAMP LENGTHS ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
2. RAMP CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL BE 5' x 5' MINIMUM AND HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. WHEN SIDEWALK WIDTH VARIES FROM 5' TO MATCH LANDING WIDTH, USE A 5' MINIMUM TRANSITION BETWEEN LANDING AND SIDEWALK, MATCH SIDEWALK WIDTH AT TIE IN POINT.
3. WINGS SHALL NOT EXCEED 10% (1:10) MAX SLOPE.
4. ALL CURB-RAMPS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 2' DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM).
5. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
6. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
7. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM SAND CUSHION.
8. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" X 6" - W5-D5 WIRE MESH.
9. REINFORCEMENT SHALL ACCURATELY BE PLACED AT MID-DEPTH AND REQUIRE CHAIRS OR BRICK TO ADEQUATELY SUPPORT THE REINFORCING STEEL WITHOUT DISPLACEMENT AND IN THE PROPER POSITION DURING THE PLACEMENT OF THE CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.
10. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE BRICK PAVERS AND LAYDOWN CURB SHALL BE LIMITED TO 1/4" JOINT SIZE. GAPS LARGER THAN 1/4" MUST BE APPROVED BY THE ENGINEER/INSPECTOR. GAPS GREATER THAN 1/4" SHALL BE SOLID MORTAR FILLED BETWEEN THE BRICK PAVERS AND CURB, UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER/INSPECTOR;
11. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO CURB RAMP SHALL NOT BE STEEPER THAN 5%. IN ADDITION, THE ADJACENT PAVEMENT SLOPE SHALL BE LESS THAN OR EQUAL TO 2%.
12. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
13. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.
14. SUBGRADE PREPARATION, SHAPE AND COMPACT SUBGRADE TO THE LINE, GRADE, AND CROSS SECTION SHOWN ON THE PLANS. BEFORE AND DURING COMPACTION, BRING THE SCARIFIED LAYER TO THE MOISTURE CONTENT DIRECTED, AND COMPACT UNTIL THERE IS NO EVIDENCE OF FURTHER CONSOLIDATION.
15. PLACING BASE MATERIAL, WHEN SHOWN ON THE PLANS, PLACE, SPREAD, AND COMPACT MATERIAL IN ACCORDANCE WITH THE APPLICABLE ITEM TO THE REQUIRED OR DIRECTED DEPTH.

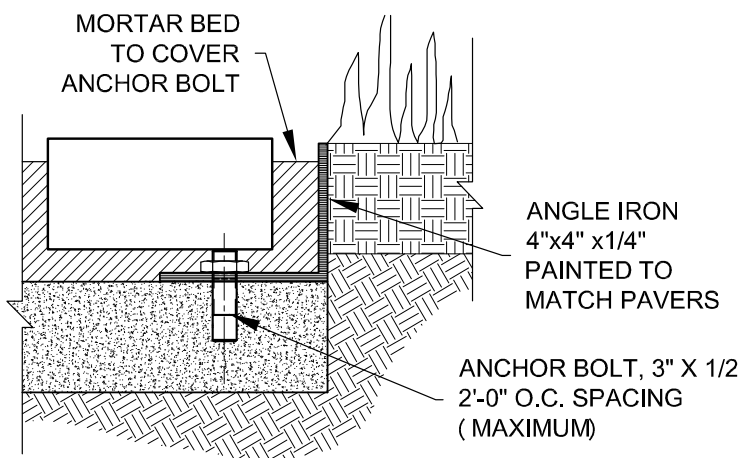
	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/16/11 REVISED 11/17/16
	SIDEWALK CURB RAMP (TYPE 1)		STANDARD NO. DET-302-06
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		2 OF 2



ELEVATION VIEW



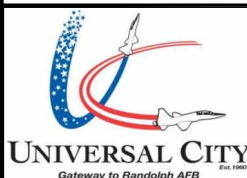
SIDEWALK LAYOUT



INSET VIEW "A"

NOTES:

1. EDGE RESTRAINTS SHALL NOT BE INSTALLED ON TOP OF THE BEDDING SAND.
2. FIRST TWO ROWS OF CONCRETE PAVERS ADJACENT TO THE BACK OF CURB SHALL BE SET IN A 1" THICK MORTAR LAYER.
3. AN ALTERNATE TO SETTING THE FIRST TWO ROWS OF CONCRETE PAVERS IN A GROUT LAYER, A PC CONCRETE BAND 4" DEEP AND 6" WIDE, MAY BE CONSTRUCTED ALONG THE BACK OF CURB.
4. SAND USED FOR BACKFILL SHOULD BE MIXED WITH CEMENT PER TXDOT SPEC.



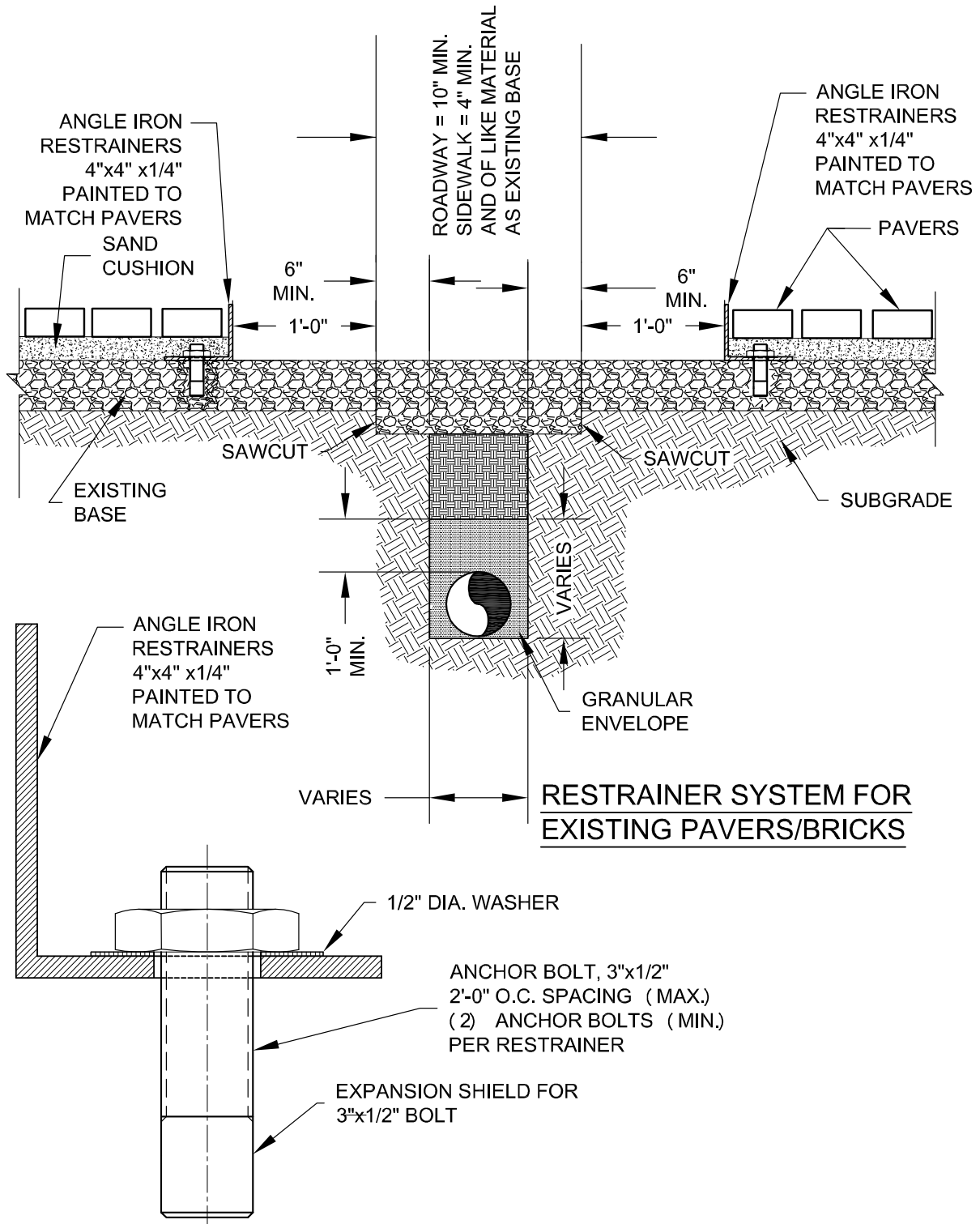
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DEPARTMENT OF PUBLIC WORKS

SIDEWALK PAVER RESTRAINT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 9/21/11
REVISED 9/8/15

STANDARD NO.
DET-302-07
1 OF 2



RESTRAINER SYSTEM



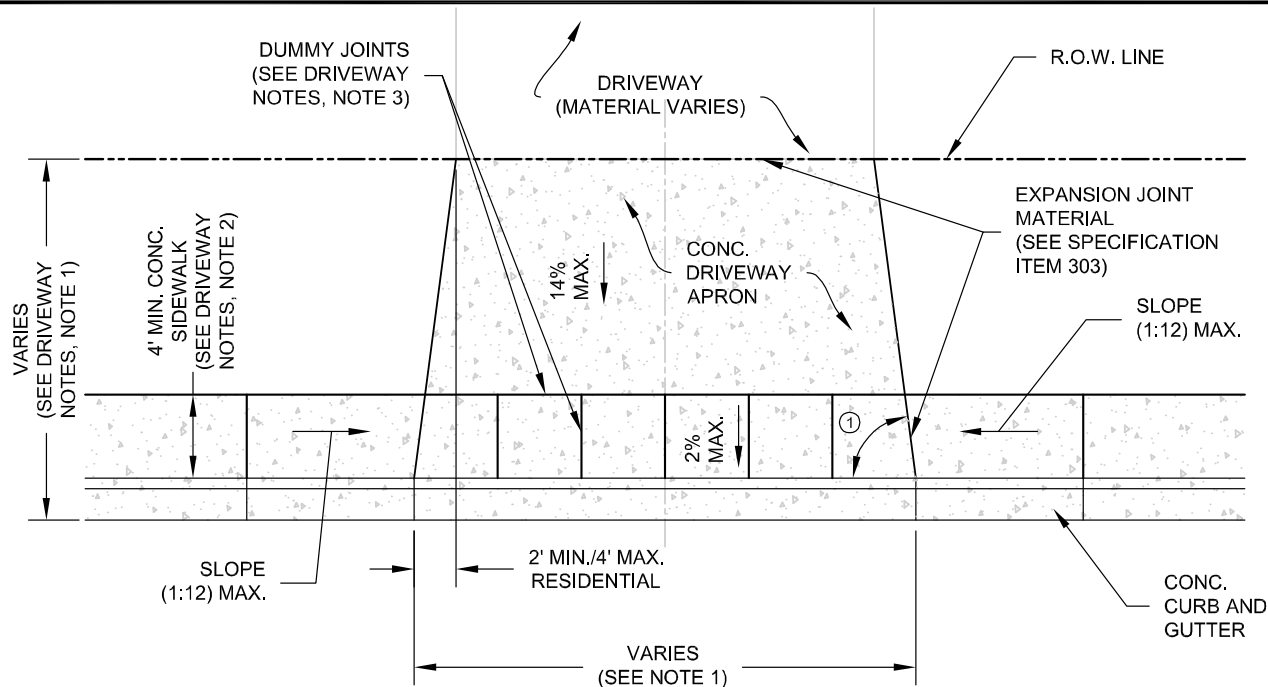
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

SIDEWALK PAVER RESTRAINT

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ADOPTED 9/21/11
REVISED 9/8/15

STANDARD NO.
DET-302-07
2 OF 2



① - 45° FOR COMMERCIAL DRIVEWAY

CONCRETE DRIVEWAY PLAN VIEW
WITH SIDEWALK ABUTTING CURB

CONCRETE DRIVEWAY GENERAL NOTES:

1. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE. THE ACCESS WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

USE CLASSIFICATION	STANDARD	MAX. ACCESS WIDTH	FLARE DIMENSION	
			MIN.	MAX.
SINGLE FAMILY RESIDENTIAL	ONE-CAR GARAGE TWO-CAR GARAGE THREE-CAR GARAGE	16 FEET 25 FEET 32 FEET	2'-0"	4'-0"
TWO-FAMILY RESIDENTIAL, R2-R4	2, ONE-CAR GARAGE 2, TWO-CAR GARAGES	25 FEET 40 FEET	2'-0"	4'-0"
TOWNHOUSE (3 STORIES HIGH OR LESS)	TWO-CAR GARAGE	25 FEET	2'-0"	4'-0"
GROUP HOMES		25 FEET	2'-0"	4'-0"
4-PLEX		25 FEET 40 FEET	2'-0"	4'-0"
COMMERCIAL (TWO-WAY DRIVE) APARTMENT COMPLEX (TWO-WAY DRIVE)	RECOMMENDED MINIMUM MAXIMUM (UP TO 175' FRONTAGE) MAXIMUM (GREATER THAN 175' FRONTAGE)	30 FEET 25 FEET 35 FEET 52 FEET	45°	45°
COMMERCIAL (ONE-WAY DRIVE) APARTMENT COMPLEX (ONE-WAY DRIVE)	RECOMMENDED (INGRESS) RECOMMENDED (EGRESS) MINIMUM MAXIMUM	18 FEET 18 FEET 16 FEET 25 FEET	45°	45°



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DEPARTMENT OF PUBLIC WORKS

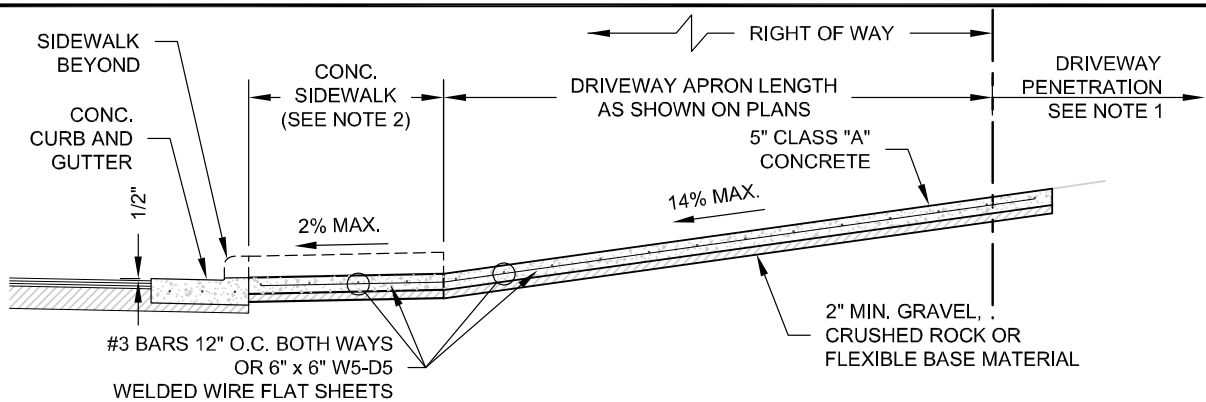
**DRIVEWAY TYPE 1
(SIDEWALK ABUTTING CURB)**

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

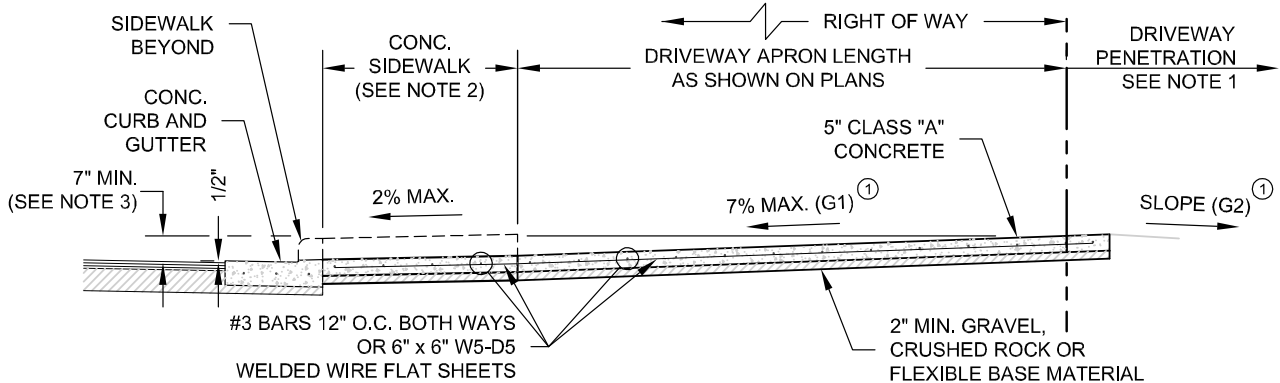
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ADOPTED 9/18/11
REVISED 11/12/16

STANDARD NO.
DET-302-08
1 OF 3

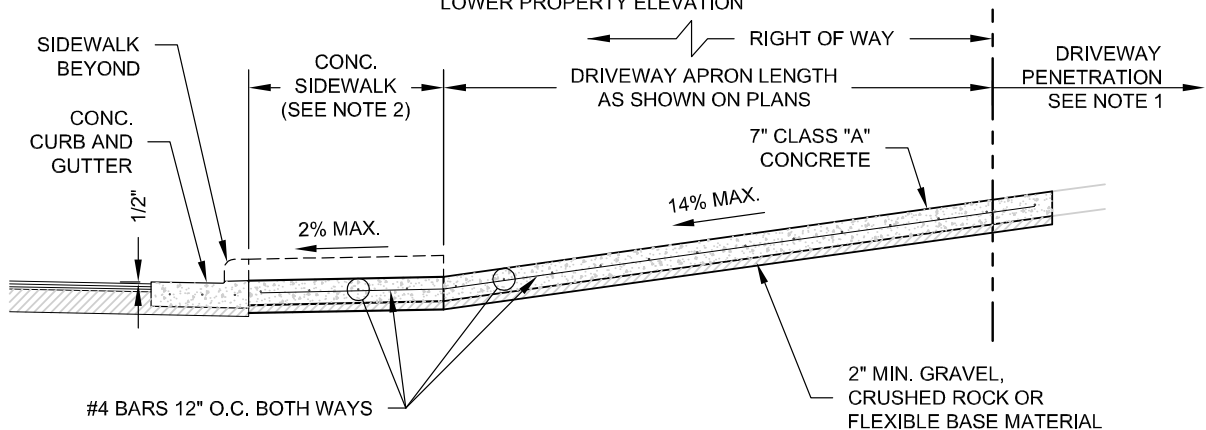


**RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB**



**RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB AND
LOWER PROPERTY ELEVATION**

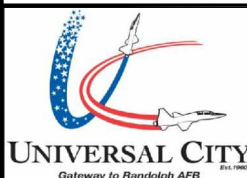
① - THE ALBEGRAIC DIFFERENCE OF G1 AND G2 SHALL BE 14% OR LESS



**COMMERCIAL DRIVEWAY SECTION
WITH SIDEWALK ABUTTING CURB**

CONCRETE DRIVEWAY GENERAL NOTES:

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY WITHIN PRIVATE PROPERTY THAT MAY BE NECESSARY FOR RECONSTRUCTION TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE.
2. FOR TYPICAL RESIDENTIAL TYPE STREETS, SIDEWALKS SHALL HAVE A MINIMUM WIDTH OF FOUR (4') FEET. FOR COMMERCIAL OR STREETS OTHER THAN TYPICAL RESIDENTIAL STREETS, THE SIDEWALK SHALL BE A MINIMUM WIDTH OF SIX (6') FEET. WHERE THE CITY HAS DESIGNATED A BIKE ROUTE, THE CITY MAY REQUIRE AN EIGHT (8') CONCRETE SIDEWALK FOR DUAL PURPOSES.
3. THE MINIMUM SEVEN (7") INCHES HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.



**CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS**

**DRIVEWAY TYPE 1
(SIDEWALK ABUTTING CURB)**


THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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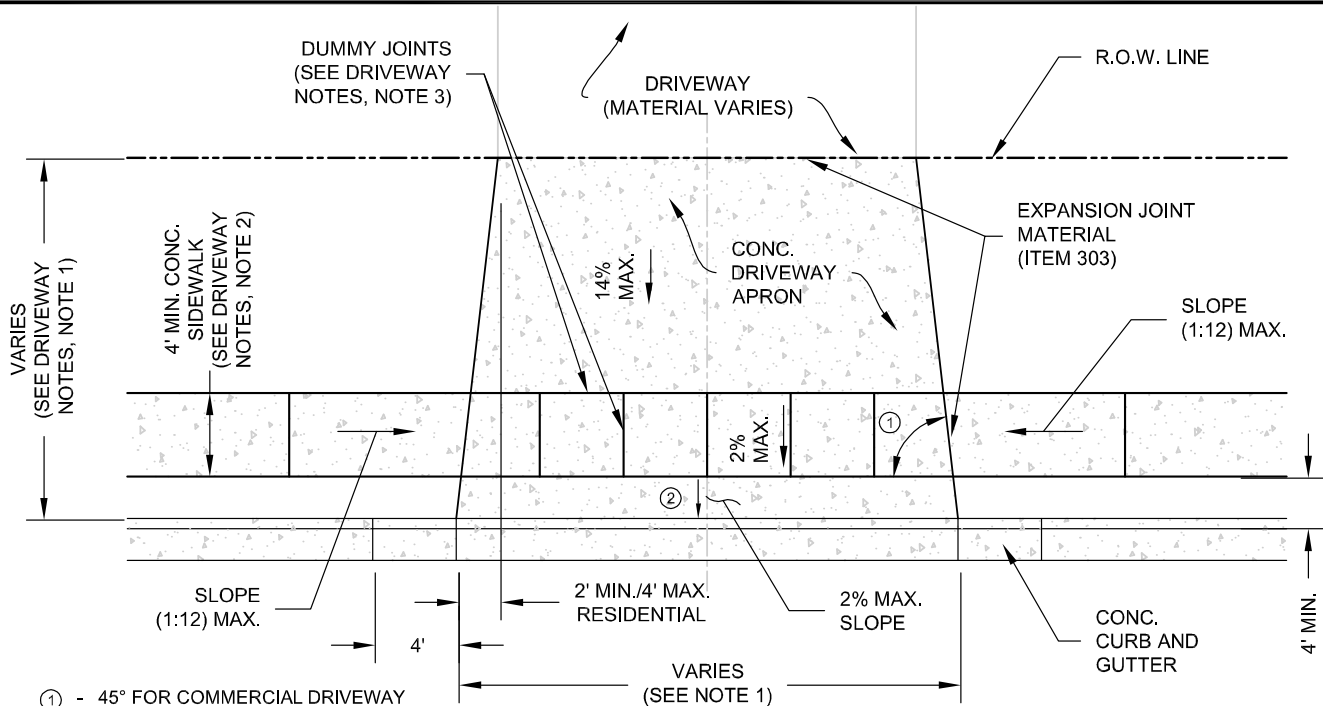
ADOPTED 9/18/11
REVISED 11/17/15

**STANDARD NO.
DET-302-08
2 OF 3**

ADDITIONAL NOTES:

1. RESIDENTIAL SIDE ENTRY GARAGES SHALL HAVE A MINIMUM OF TWENTY (20') FEET SETBACK FROM THE ADJACENT SIDE PROPERTY LINE.
2. FOR TYPICAL RESIDENTIAL TYPE STREETS, SIDEWALKS SHALL HAVE A MINIMUM WIDTH OF FOUR (4') FEET. FOR COMMERCIAL OR STREETS OTHER THAN TYPICAL RESIDENTIAL STREETS, THE SIDEWALK SHALL BE A MINIMUM WIDTH OF SIX (6') FEET. WHERE THE CITY HAS DESIGNATED A BIKE ROUTE, THE CITY MAY REQUIRE AN EIGHT (8') CONCRETE SIDEWALK FOR DUAL PURPOSES.
3. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
4. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS, 1/2" IN DIAMETER AND TWENTY-FOUR (24") INCHES IN LENGTH, SHALL BE SPACED EIGHTEEN (18") INCHES APART AT EACH EXPANSION JOINT. DOWEL SLEEVES SHALL BE PLACED ON DOWEL BARS ON ONE SIDE OF THE EXPANSION JOINT UNIFORMLY.
5. CIRCULAR DRIVES SHALL BE A MAXIMUM OF TWO (2) SIXTEEN (16') FEET CURB CUTS WITH A MINIMUM OF TWENTY-EIGHT (28') FEET BETWEEN EACH CUT.
6. ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE RIGHT-OF-WAY LINE.
7. REINFORCEMENT SHALL BE ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF "BAR SUPPORTS" OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE PORTLAND CEMENT CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER. MAINTAIN A MINIMUM 2" CLEAR COVER FOR REINFORCEMENT FROM FORMS AND ADJACENT SURFACES.
8. IF DIMENSION IS LESS THAN 5 FEET, REMOVE CURB AND GUTTER TO EXISTING EXPANSION JOINT AND POUR MONOLITHICALLY WITH THE DRIVEWAY.
9. IF THE BASE IS OVER EXCAVATED WHERE THE CURB AND GUTTER WAS REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
10. ALL DRIVEWAYS MUST BE CONSTRUCTED WITHIN THE STREET FRONTAGE OF THE SUBJECT PROPERTY AS DETERMINED BY EXTENDING THE SIDE PROPERTY LINES TO THE CURB.
11. DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF AN INTERSECTING RIGHTS-OF-WAY THAN 60% OF PARCEL FRONTAGE OR 50 FEET, WHICHEVER IS LESS.
12. DRIVEWAYS SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
13. SINGLE FAMILY LOTS LIMITED TO ONE DRIVEWAY EXCEPT FOR APPROVED SEMICIRCULAR DRIVES.
14. WHEN TWO (2) DRIVEWAYS ARE USED (ONE PER UNIT; TWO MAXIMUM) FOR DUPLEXES AND TOWN HOMES, SINGLE FAMILY STANDARDS SHALL APPLY.
15. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G1" PLUS "G2" IS GREATER THAN 14%.
16. SEE SPECIFICATION ITEM 303 FOR APPROVED MATERIAL FOR EXPANSION JOINTS.
17. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
18. PLACE A DUMMY JOINT DOWN THE CENTER OF ALL DRIVEWAYS.
19. WATER METER BOXES AND WASTEWATER CLEANOUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY, SIDEWALK, AND CURB AREAS.
20. WHEN INSTALLING NEW DRIVEWAY, REMOVE EXISTING CURB IF SIGNS OF STRESS EXIST AND POUR MONOLITHICALLY WITH THE DRIVEWAY (2' PAST EACH SIDE).
21. WHEN TIE IN TO EXISTING CONCRETE USE #4 BARS 18" IN LENGTH DOWELED 9" SPACED AT 2' O.C. EPOXY GROUT ALL TIE BARS. COMPLETELY FILL THE TIE BAR HOLE WITH TYPE III, CLASS A OR CLASS C EPOXY BEFORE INSERTING TIE BAR INTO THE HOLE.
22. SUBGRADE PREPARATION, SHAPE AND COMPACT SUBGRADE TO THE LINE, GRADE, AND CROSS-SECTION SHOWN ON THE PLANS. BEFORE AND DURING COMPACTION, BRING THE SCARIFIED LAYER TO THE MOISTURE CONTENT DIRECTED, AND COMPACT UNTIL THERE IS NO EVIDENCE OF FURTHER CONSOLIDATION.
23. PLACING BASE MATERIAL, WHEN SHOWN ON THE PLANS, PLACE, SPREAD, AND COMPACT MATERIAL IN ACCORDANCE WITH THE APPLICABLE ITEM TO THE REQUIRED OR DIRECTED DEPTH.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 9/18/11 REVISED 11/17/15
	DRIVEWAY NOTES		STANDARD NO. DET-302-08
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		3 OF 3
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CONCRETE DRIVEWAY PLAN VIEW
WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY GENERAL NOTES:

1. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE. THE ACCESS WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

USE CLASSIFICATION	STANDARD	MAX. ACCESS WIDTH	FLARE DIMENSION	
			MIN.	MAX.
SINGLE FAMILY RESIDENTIAL	ONE-CAR GARAGE TWO-CAR GARAGE THREE-CAR GARAGE	16 FEET 25 FEET 32 FEET	2'-0"	4'-0"
TWO-FAMILY RESIDENTIAL, R2-R4	2, ONE-CAR GARAGE 2, TWO-CAR GARAGES	25 FEET 40 FEET	2'-0"	4'-0"
TOWNHOUSE (3 STORIES HIGH OR LESS)	TWO-CAR GARAGE	25 FEET	2'-0"	4'-0"
GROUP HOMES		25 FEET	2'-0"	4'-0"
4-PLEX		25 FEET 40 FEET	2'-0"	4'-0"
COMMERCIAL (TWO-WAY DRIVE) APARTMENT COMPLEX (TWO-WAY DRIVE)	RECOMMENDED MINIMUM MAXIMUM (UP TO 175' FRONTAGE) MAXIMUM (GREATER THAN 175' FRONTAGE)	30 FEET 25 FEET 35 FEET 52 FEET	45°	45°
COMMERCIAL (ONE-WAY DRIVE) APARTMENT COMPLEX (ONE-WAY DRIVE)	RECOMMENDED (INGRESS) RECOMMENDED (EGRESS) MINIMUM MAXIMUM	18 FEET 18 FEET 16 FEET 25 FEET	45°	45°



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

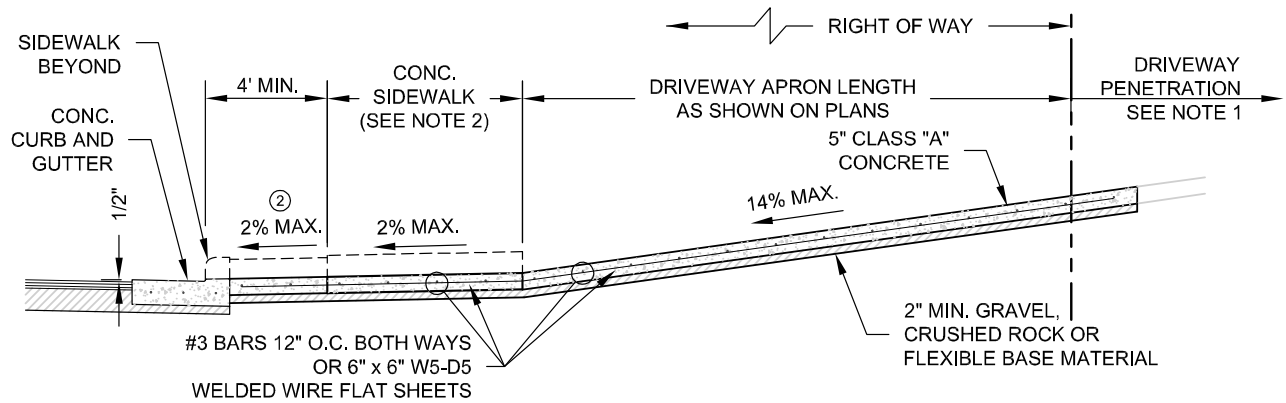
**DRIVEWAY TYPE 2
(SIDEWALK SEPARATED FROM CURB)**

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

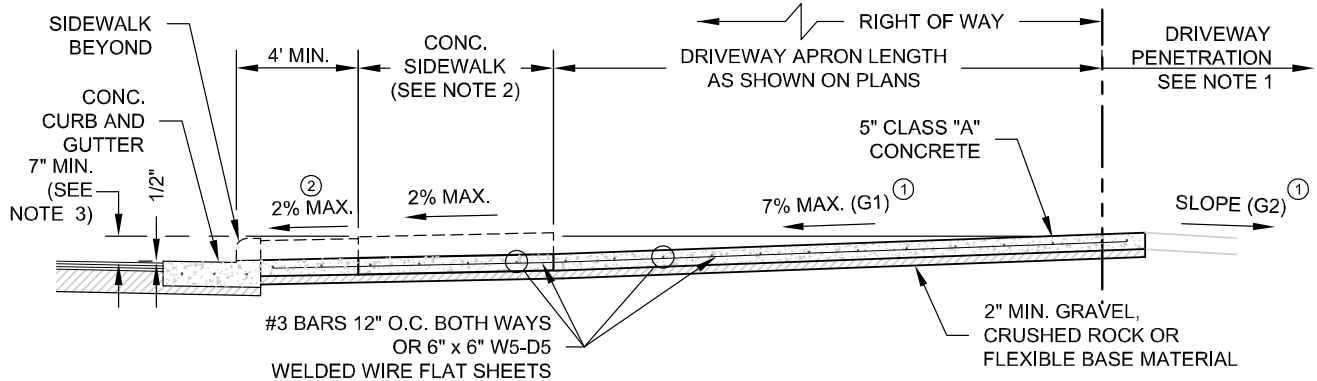
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ADOPTED 9/19/11
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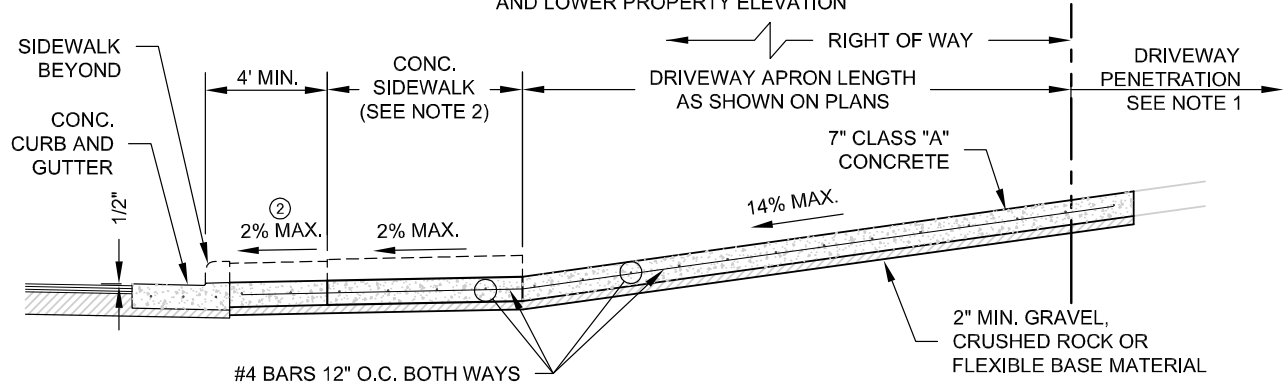
STANDARD NO.
DET-302-09
1 OF 3



RESIDENTIAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB



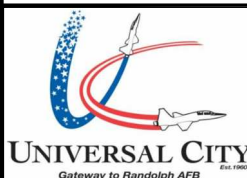
RESIDENTIAL DRIVEWAY SECTION ① - THE ALBEGRAIC DIFFERENCE OF G1 AND G2 SHALL BE 14% OR LESS
WITH SIDEWALK SEPARATED FROM CURB
AND LOWER PROPERTY ELEVATION



COMMERCIAL DRIVEWAY SECTION ② - 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS FOUR (4') FEET OR GREATER.
WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY GENERAL NOTES:

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY WITHIN PRIVATE PROPERTY THAT MAY BE NECESSARY FOR RECONSTRUCTION TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE.
2. FOR TYPICAL RESIDENTIAL TYPE STREETS, SIDEWALKS SHALL HAVE A MINIMUM WIDTH OF FOUR (4') FEET. FOR COMMERCIAL OR STREETS OTHER THAN TYPICAL RESIDENTIAL STREETS, THE SIDEWALK SHALL BE A MINIMUM WIDTH OF SIX (6') FEET. WHERE THE CITY HAS DESIGNATED A BIKE ROUTE, THE CITY MAY REQUIRE AN EIGHT (8') CONCRETE SIDEWALK FOR DUAL PURPOSES.
3. THE MINIMUM SEVEN (7") INCHES HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

DRIVEWAY TYPE 2
(SIDEWALK SEPARATED FROM CURB)


THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 9/18/11
REVISED 11/12/15

STANDARD NO.
DET-302-09
2 OF 3

ADDITIONAL NOTES:

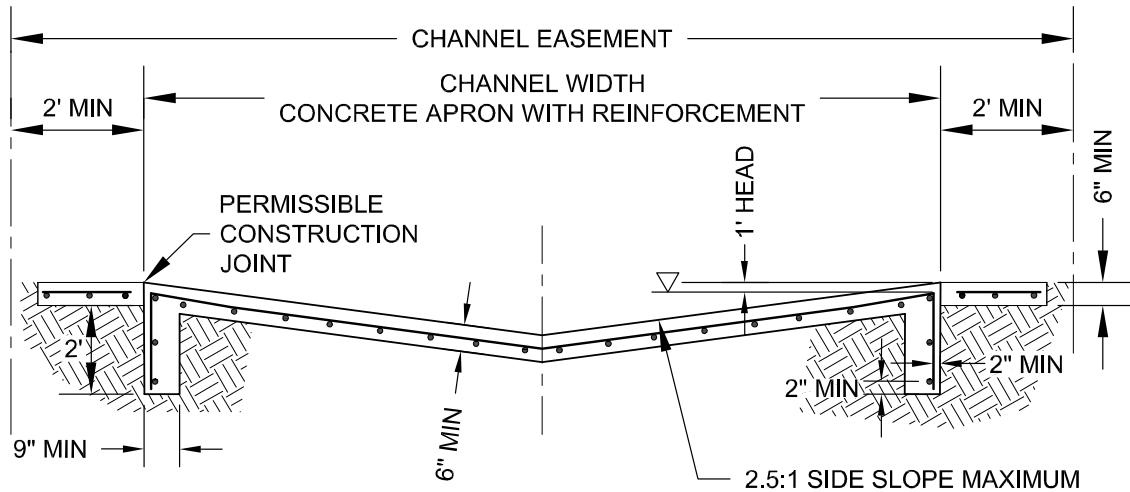
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4. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS, 1/2" IN DIAMETER AND TWENTY-FOUR (24") INCHES IN LENGTH, SHALL BE SPACED EIGHTEEN (18") INCHES APART AT EACH EXPANSION JOINT. DOWEL SLEEVES SHALL BE PLACED ON DOWEL BARS ON ONE SIDE OF THE EXPANSION JOINT UNIFORMLY.
5. CIRCULAR DRIVES SHALL BE A MAXIMUM OF TWO (2) SIXTEEN (16') FEET CURB CUTS WITH A MINIMUM OF TWENTY-EIGHT (28') FEET BETWEEN EACH CUT.
6. ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE RIGHT-OF-WAY LINE.
7. REINFORCEMENT SHALL BE ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF "BAR SUPPORTS" OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE PORTLAND CEMENT CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER. MAINTAIN A MINIMUM 2" CLEAR COVER FOR REINFORCEMENT FROM FORMS AND ADJACENT SURFACES.
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20. WHEN INSTALLING NEW DRIVEWAY, REMOVE EXISTING CURB IF SIGNS OF STRESS EXIST AND POUR MONOLITHICALLY WITH THE DRIVEWAY (2' PAST EACH SIDE).
21. WHEN TIE IN TO EXISTING CONCRETE USE #4 BARS 18" IN LENGTH DOWELED 9" SPACED AT 2' O.C. EPOXY GROUT ALL TIE BARS. COMPLETELY FILL THE TIE BAR HOLE WITH TYPE III, CLASS A OR CLASS C EPOXY BEFORE INSERTING TIE BAR INTO THE HOLE.
22. SUBGRADE PREPARATION, SHAPE AND COMPACT SUBGRADE TO THE LINE, GRADE, AND CROSS-SECTION SHOWN ON THE PLANS. BEFORE AND DURING COMPACTION, BRING THE SCARIFIED LAYER TO THE MOISTURE CONTENT DIRECTED, AND COMPACT UNTIL THERE IS NO EVIDENCE OF FURTHER CONSOLIDATION.
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	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 9/19/11 REVISED 11/17/15
	DRIVEWAY NOTES		STANDARD NO. DET-302-09
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		3 OF 3
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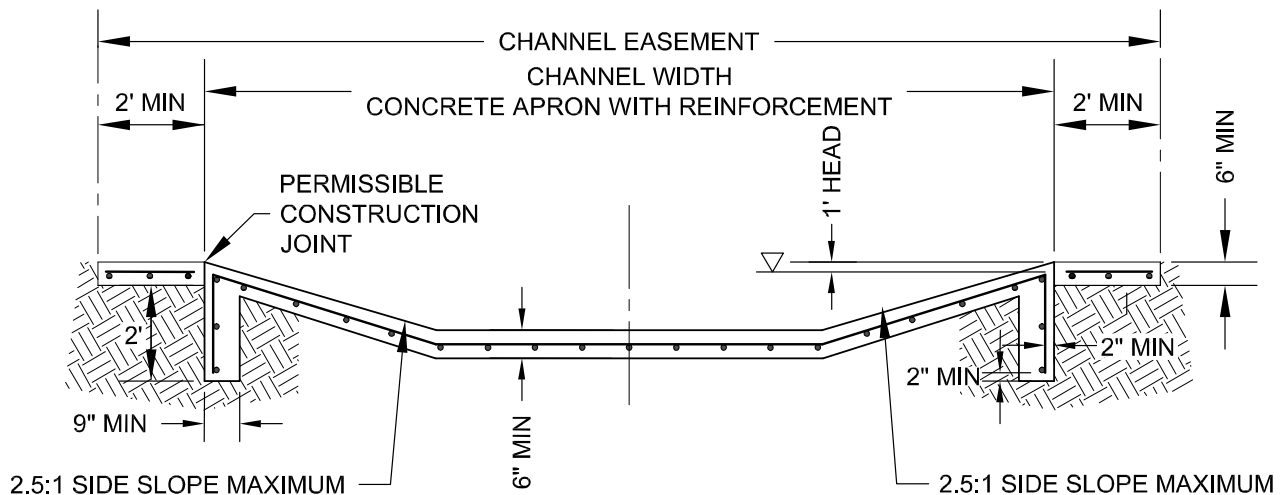
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Storm Details

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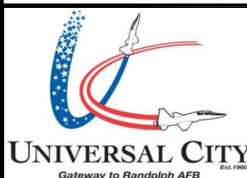
TYPE "A" SECTION



TYPE "B" SECTION

NOTES:

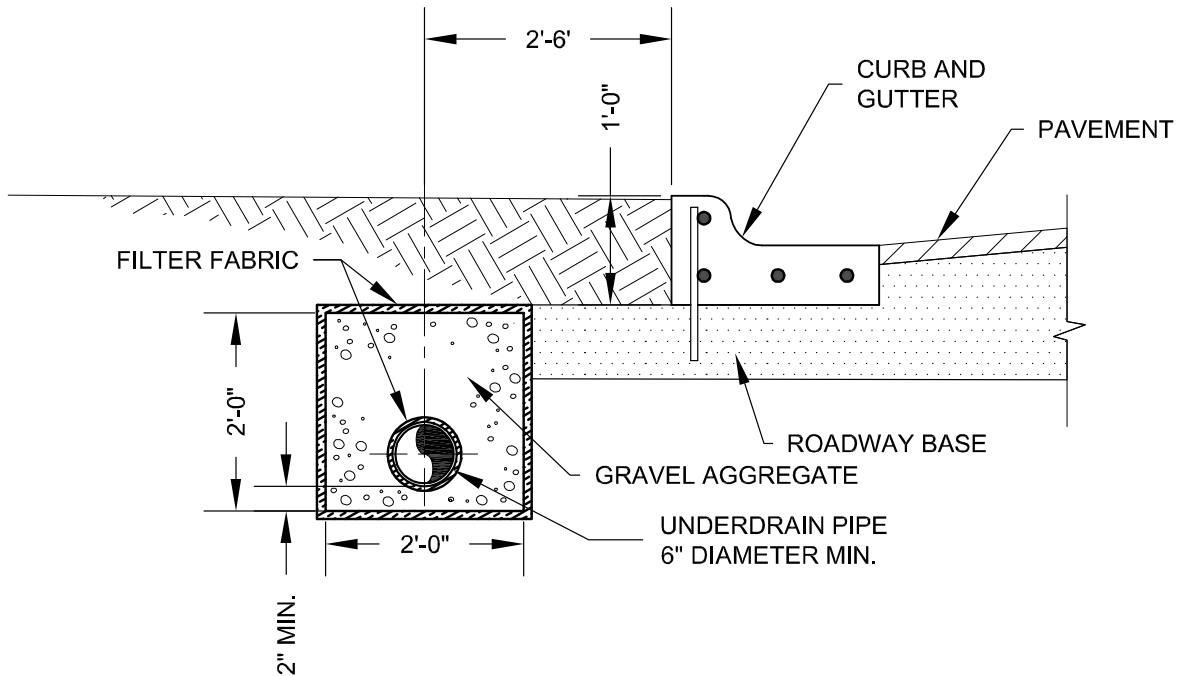
1. ALL CONCRETE SHALL BE CLASS "A" 3000 P.S.I. MINIMUM UNLESS OTHERWISE SHOWN.
2. CONCRETE THICKNESS SHALL BE 6" MINIMUM ALONG APRON AREA.
3. DITCH TOEDOWN SHALL BE 2' DEEP BY 9" WIDTH MINIMUM AS SHOWN ON THE DETAIL.
4. REINFORCING STEEL SHALL BE #4 BARS SPACED AT 18" O.C.E.W. GRADE 60.
5. NEW RIPRAP SHOULD BE ATTACHED TO EXISTING BY #4 BARS DOWELED 6" INTO EXISTING RIPRAP. THESE BARS ARE TO BE SPACED AT 18" O.C. AND HAVE A LENGTH OF 18".



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
DRAINAGE DITCH IN EASEMENTS	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	


ADOPTED 8/18/11
REVISED 12/4/15

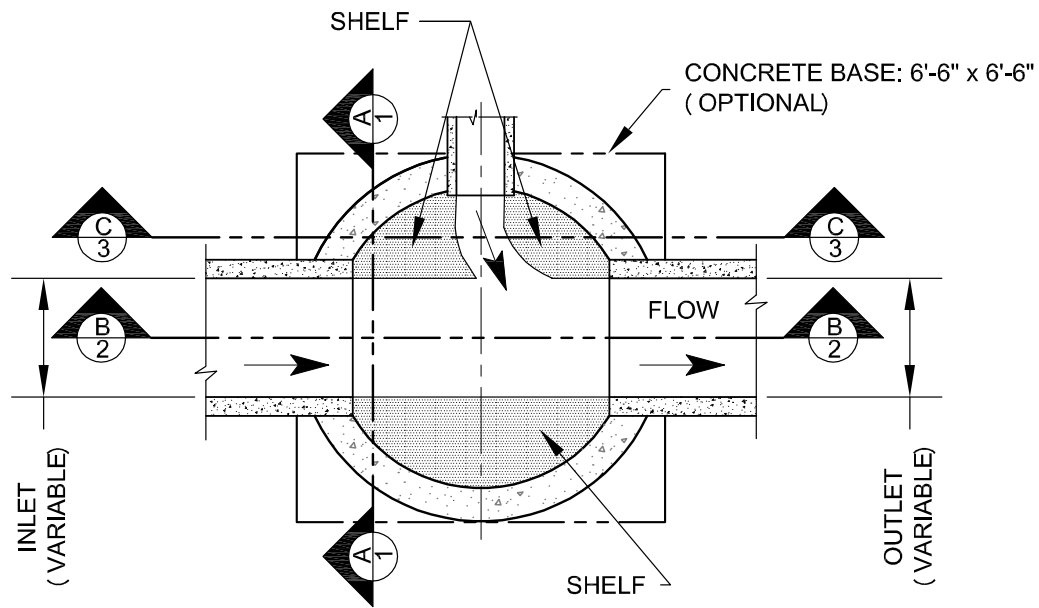
STANDARD NO.
DET-400-01
 1 OF 1



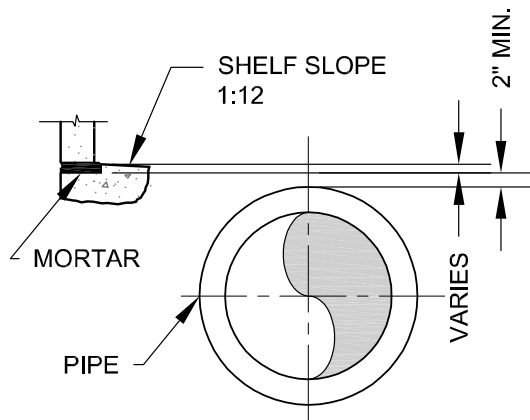
NOTES:

1. FILTER FABRIC SHALL BE INSTALLED AROUND GRAVEL AND PIPE AS SHOWN.
2. USE GRADE 3 GRAVEL AGGREGATE AROUND PIPE.
3. UNDERDRAIN PIPE MATERIAL SHALL BE PERFORATED SCHEDULE 40 PVC.
4. FURNISH FILTER FABRIC IN ACCORDANCE WITH TXDOT DMS-6200, "FILTER FABRIC."

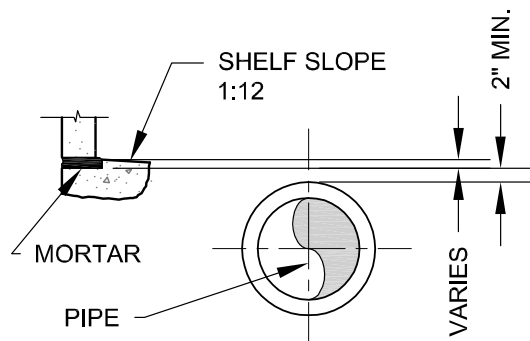
	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 12/4/15
	UNDERDRAINS		STANDARD NO. DET-401-01
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		1 OF 1
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PLAN VIEW



SECTION "A-A"



SECTION "C-C"

MIN. SIZES

MH DIA.	PIPE SIZE
4'	18" TO 24"
5'	30" TO 42"
6'	48" TO 54"
7'	60" TO 66"

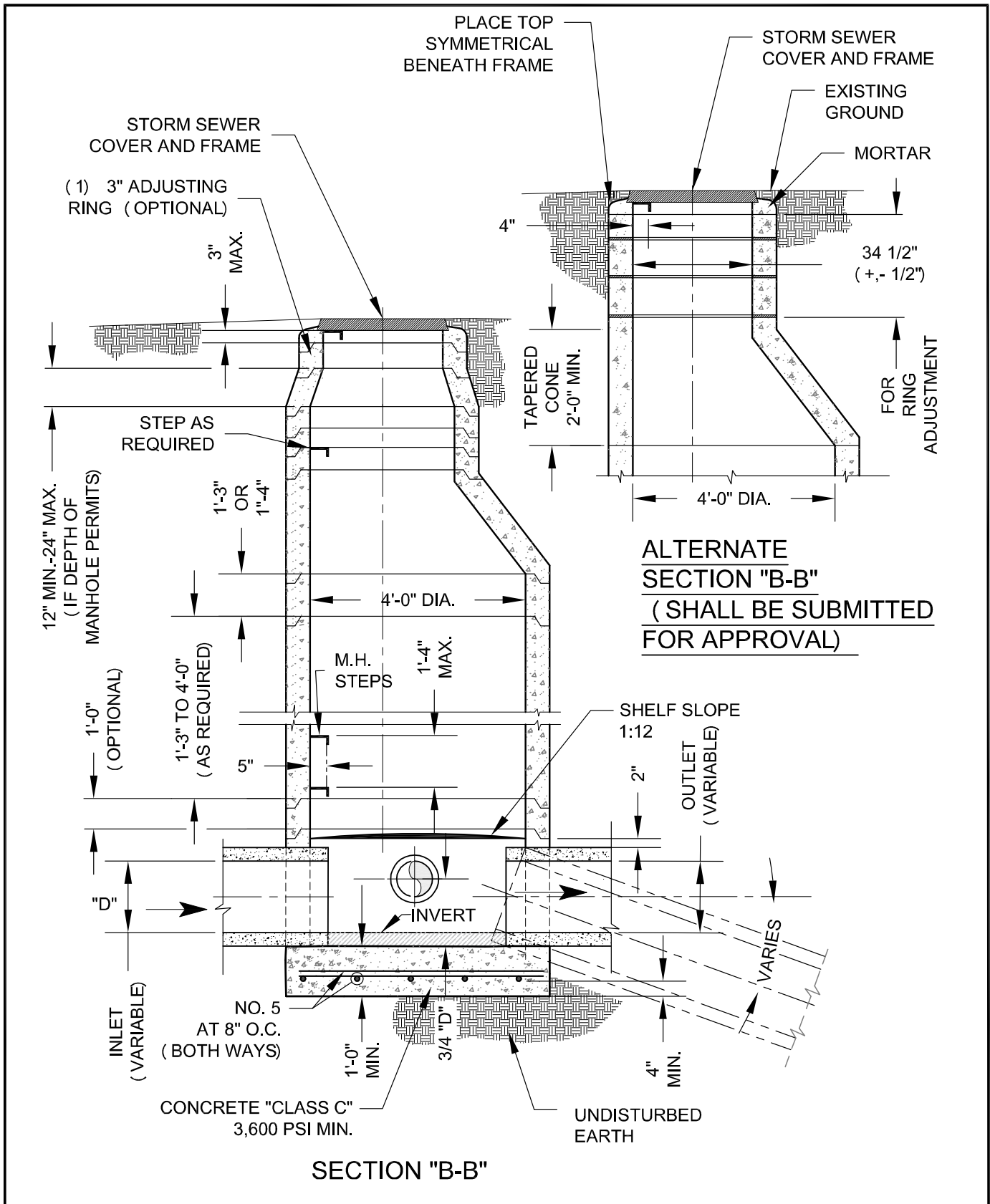
NOTES:


- 32" FRAME AND COVER SHALL BE USED.
- MANHOLE SIZES FROM TABLE ARE MINIMUMS. THE PIPE SIZES, INLET AND OUTLET ANGLES SHALL ALSO BE CONSIDERED TO DETERMINE THE APPROPRIATE SIZE MANHOLE TO BE USED.

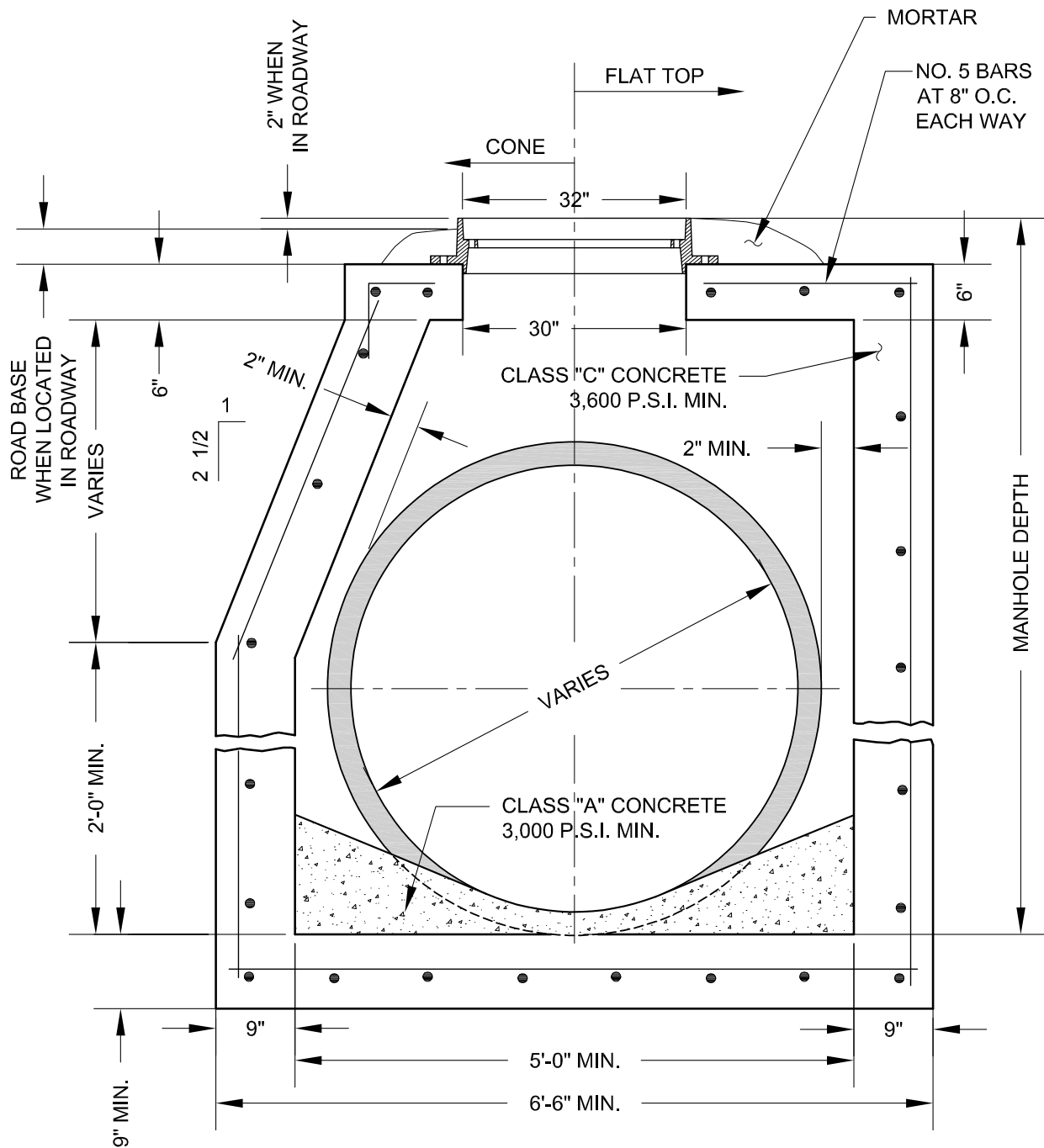


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
PRE-CAST CONCRETE STORM SEWER MANHOLE
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 8/18/11
REVISED 12/4/15
STANDARD NO.
DET-402-01
1 OF 2



	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/30/11 REVISED 12/4/15
	PRE-CAST CONCRETE STORM SEWER MANHOLE		STANDARD NO. DET-402-01 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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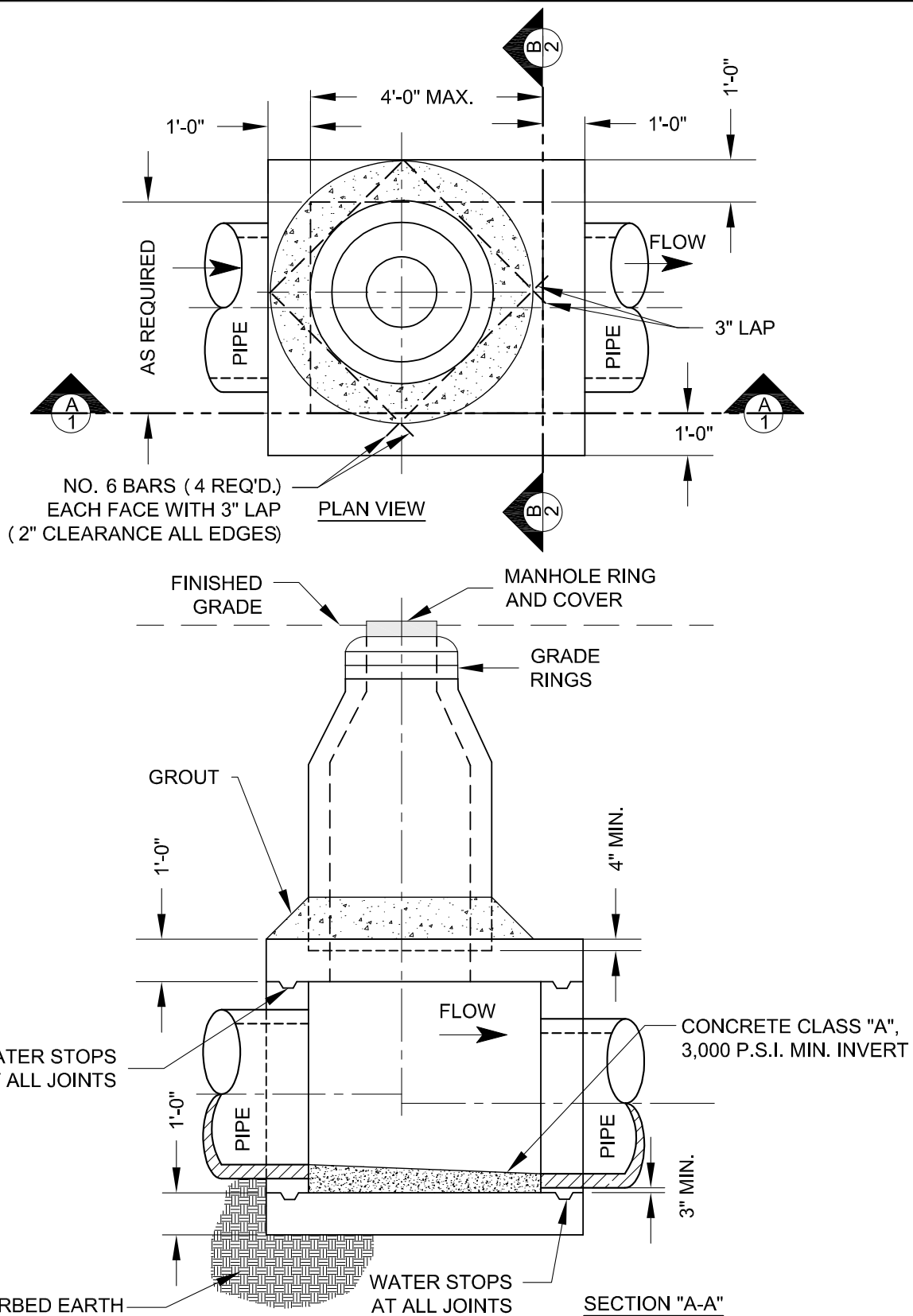
NOTES:

1. BOX WALLS MUST BE FORMED INSIDE AND OUT WITH APPROVED MATERIALS.
2. ALL CONCRETE SHALL BE CLASS "C", 3,600 P.S.I. MINIMUM.
3. REINFORCING STEEL SHALL BE A MINIMUM OF GRADE 60.



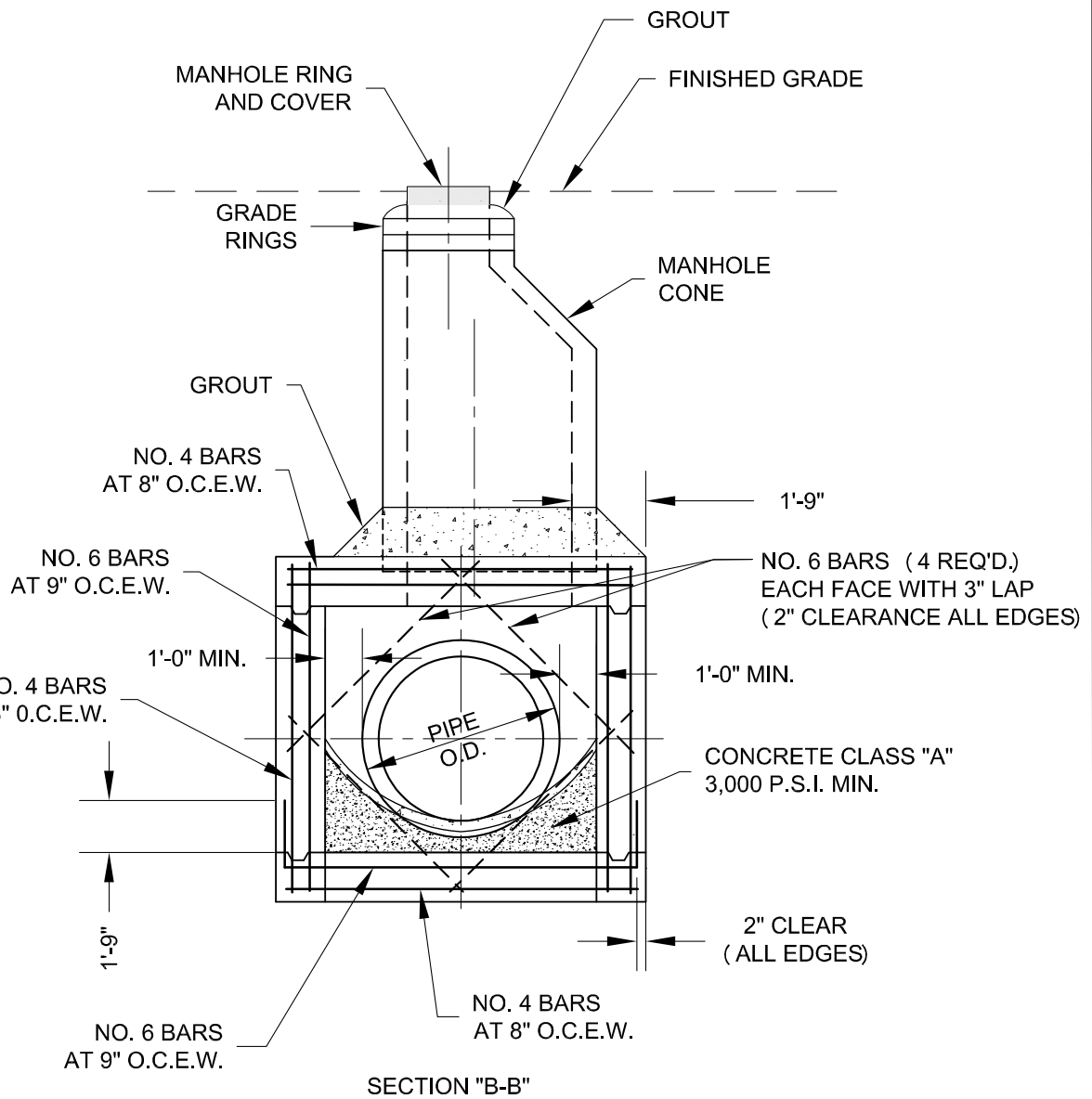
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
STORM SEWER MANHOLE DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/18/11 REVISED 6/24/15	STANDARD NO. DET-402-02 1 OF 1
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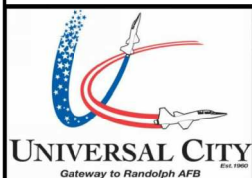
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
BOX MANHOLE 30' & LARGER PIPE	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/30/11 REVISED 6/24/15	STANDARD NO. DET-402-03 1 OF 2
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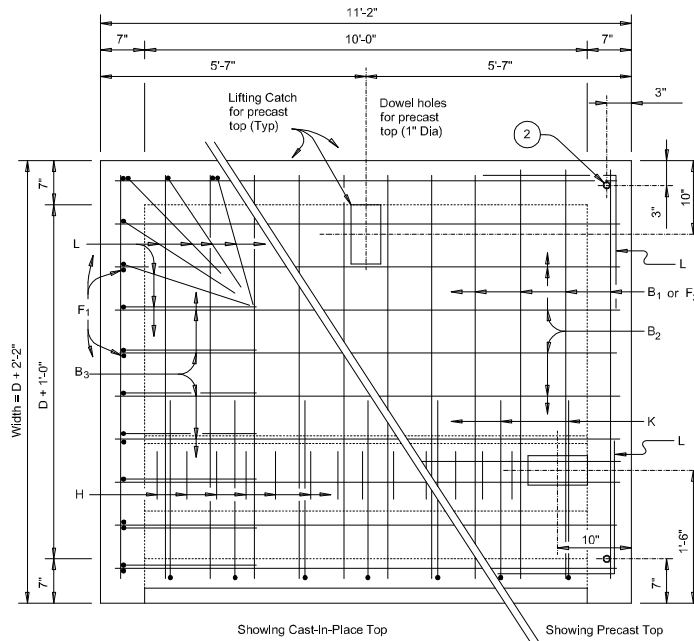
NOTES:

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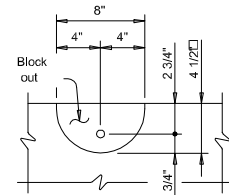
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
BOX MANHOLE 30' & LARGER PIPE	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUHNSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/30/11 REVISED 6/24/15	STANDARD NO. DET-402-03 2 OF 2
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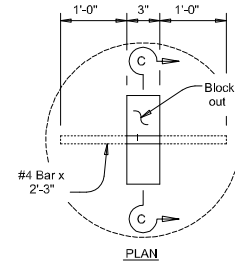


PLAN

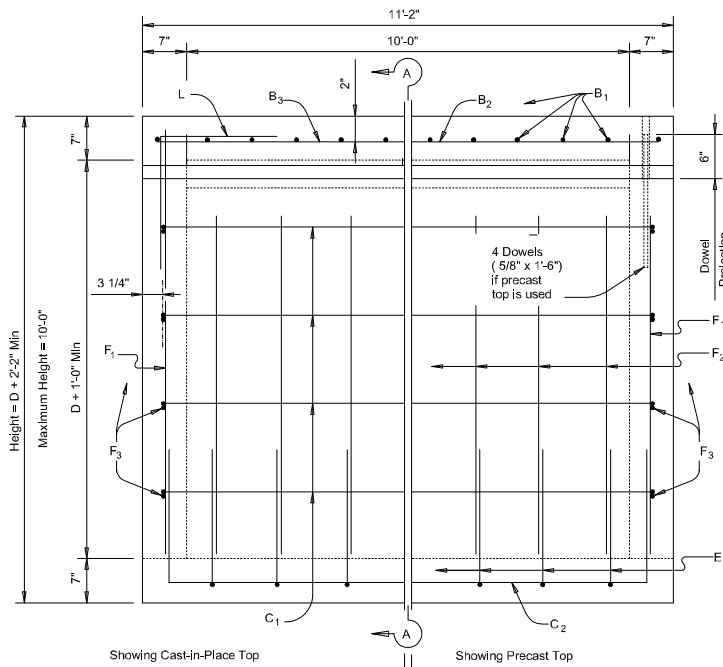
2 If precast top is used, provide 4 - 5/8" dia x 1'-6" smooth bars in inlet walls for 1" dia holes



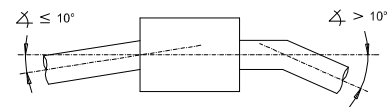
SECTION C-C



LIFTING CATCH



ELEVATION



PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.



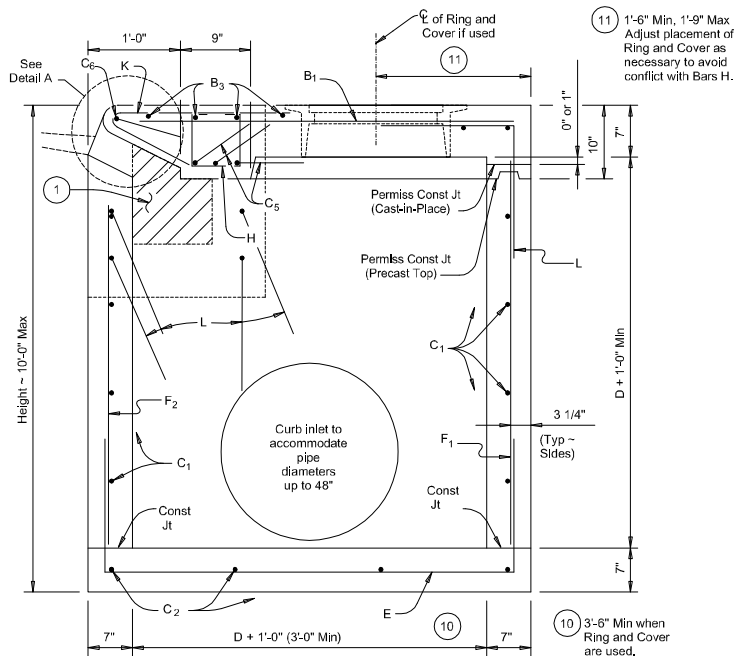
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

**CURB INLET (10')
CAST IN PLACE**

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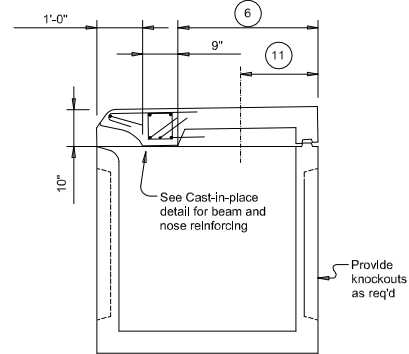
ADOPTED 8/18/11
REVISED 11/17/15

**STANDARD NO.
DET-402-04
1 OF 4**



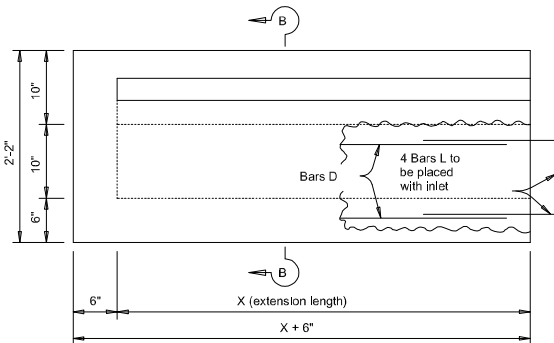
SECTION A-A

- 1 Block out to accommodate extension if used and to place 4 Bars L

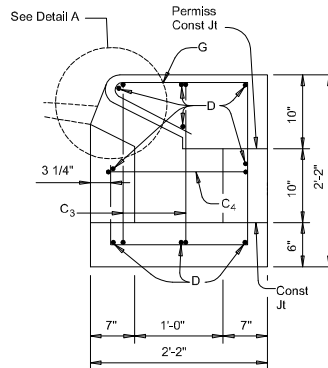


PREFABRICATED INLET

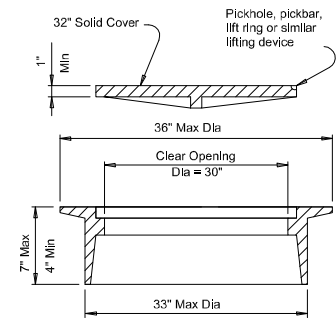
- 6 For reinforcing steel and dimensions not shown, see fabricator's design drawing. Structure shall be of the size required to accommodate size of pipe shown elsewhere in the plans. Length of inlet = 10'-0"



EXTENSION ELEVATION

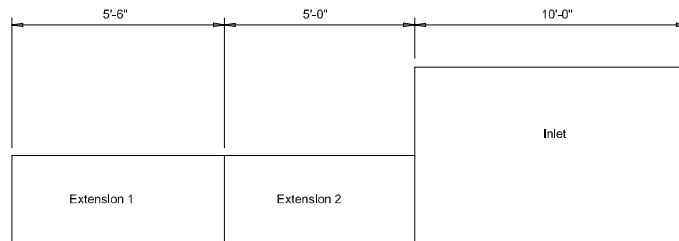


SECTION B-B



RING AND COVER DETAILS

Approximate Weight = 245 lb



Note:

- If more than one extension is required, they should all be located on one side as indicated above. No slope is required in flowline of extension.
- Extension side by side will not be allowed for sag inlets.

EXTENSION PLACEMENT

EXTENSION QUANTITIES		
Ext	"X"	CI "A" Conc
No.	Ft	CY
1	5	0.7
2	10	1.2
3	15	1.8
4	20	2.4



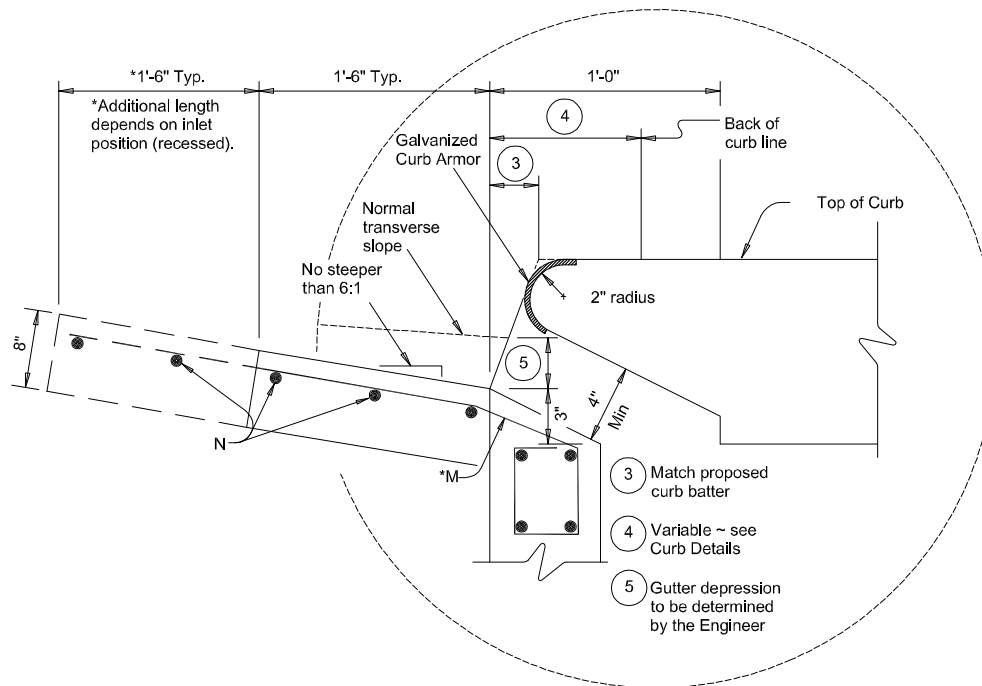
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**CURB INLET (10')
CAST IN PLACE**

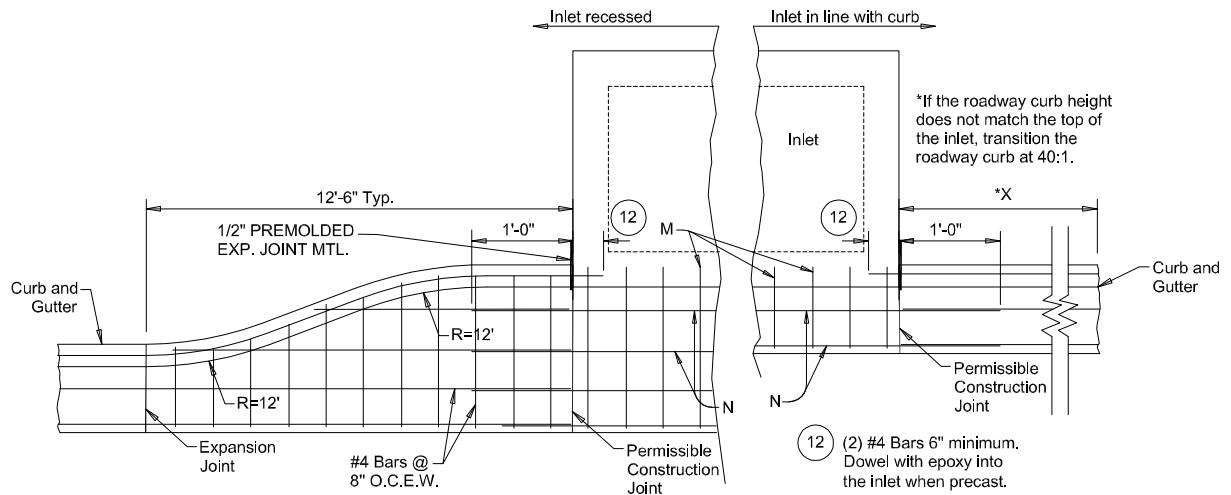
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REVISED 11/17/15

**STANDARD NO.
DET-402-04
2 OF 4**



DETAIL A



CURB AND GUTTER CONNECTION



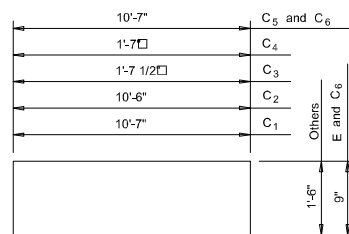
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**CURB INLET (10')
CAST IN PLACE**

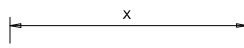
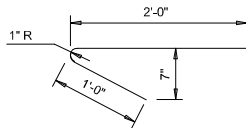
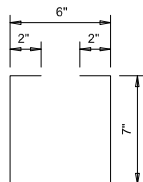
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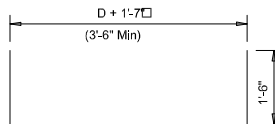
STANDARD NO.
DET-402-04
3 OF 4



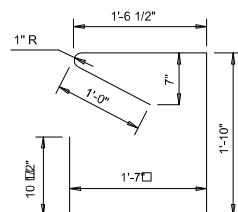
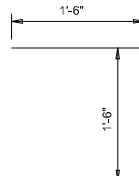
BARS C



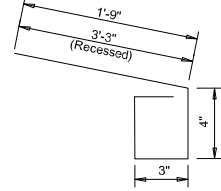
BARS D



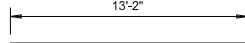
BARS E



BARS G



BARS M



ESTIMATED QUANTITIES					8
Pipe Size =D	Height	CI "C" Conc			7
		For 4 Foot Width	Per 6 Inch Add'l Width	Per 1 Foot Add'l Height	
In	Ft	CY	CY	CY	
18"	3'-6"	3.5	—	.61	
24"	4'-2"	3.8	.31	.61	
30"	4'-8"	4.1	.31	.61	
36"	5'-2"	4.4	.33	.61	
42"	5'-8"	4.7	.34	.61	
48"	6'-2"	5.0	.35	.61	

7 For Width (4'-0" Min) = D + 2'-0"

8 Does not apply to prefabricated inlets

REINFORCING STEEL		
Bar	Size	Spacing
B ₁	#4	6"
B ₂	#5	6"
B ₃	#4	6"
C ₁₋₂	#4	12"
C ₃₋₄	#4	9
C ₅	#6	9
C ₆	#4	9
D	#4	9
E	#4	12"
F ₁₋₃	#4	12"
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"
M	#4	12"
N	#4	9

9 As shown

NOTES:

1. QUANTITIES SHOWN HEREIN ARE FOR CONTRACTOR'S INFORMATION ONLY.
2. UNLESS OTHERWISE SHOWN IN THE PLANS, PAYMENT WILL BE MADE FOR EACH INLET OF THE TYPE SPECIFIED AND FOR EACH EXTENSION. EACH FIVE FOOT CURB OPENING OF EXTENSION IS CONSIDERED "ONE EXTENSION" REGARDLESS OF WHETHER PLACED MONOLITHICALLY OR PRECAST. EXTENSION LENGTH SHALL BE IN MULTIPLES OF 5 FEET.
3. ENGINEER HAS THE OPTION OF SPECIFYING CAST-IN-PLACE TOP WITH RING AND COVER OR REMOVABLE PRECAST TOP AS SPECIFIED ELSEWHERE IN PLANS.
4. WHEN APPROVED, PRECAST INLETS WITH EQUIVALENT STRUCTURAL CAPACITY MAY BE FURNISHED. SEALED ENGINEERING CALCULATIONS AND DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.
5. WHEN APPROVED BY THE ENGINEER, OPENING CONFIGURATIONS OF EQUIVALENT HYDRAULIC DESIGN MAY BE FURNISHED. SHOP DRAWINGS WILL NOT BE REQUIRED.
6. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
7. RING AND COVER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M306, "STANDARD SPECIFICATION FOR DRAINAGE STRUCTURE CASTINGS". MATERIALS SHALL CONFORM TO ASTM A48, CLASS 35B FOR GRAY IRON CASTINGS OR ASTM A536, GRADE 65-45-12 FOR DUCTILE IRON CASTINGS. ALUMINUM ALLOY CASTINGS SHALL NOT BE PERMITTED.
8. INSTALL 1/2" PREMOLDED EXPANSION JOINT MATERIAL WHERE CURB CONNECTS TO INLET.



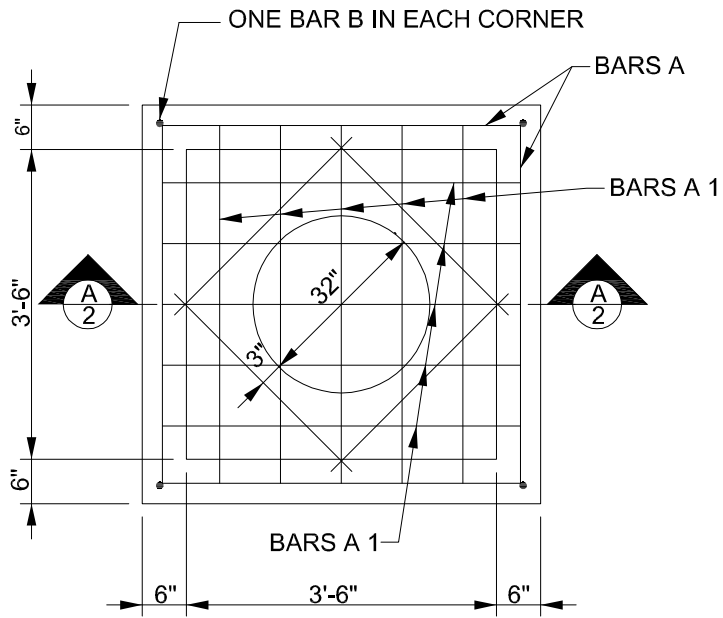
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CURB INLET (10') CAST IN PLACE

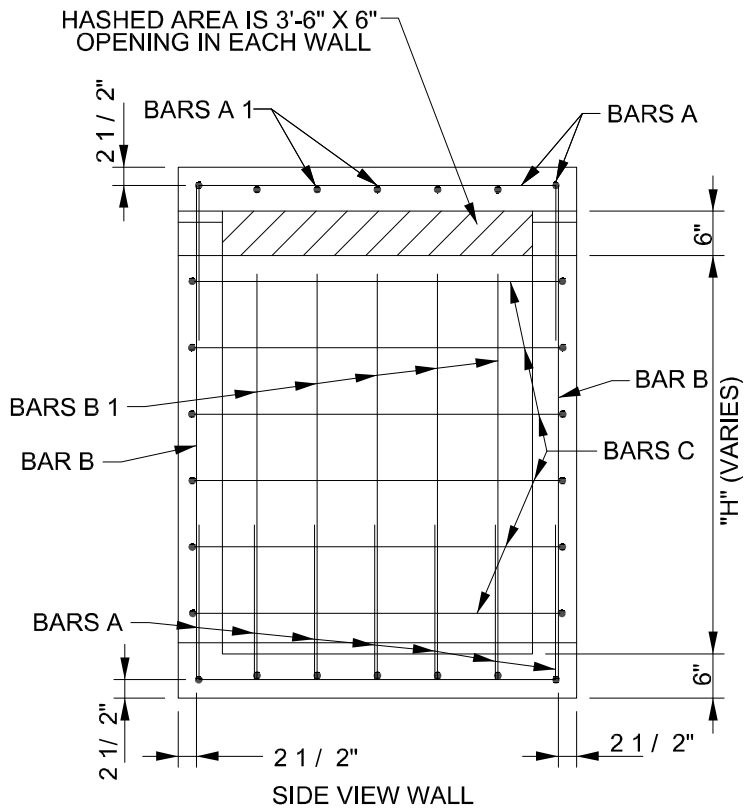
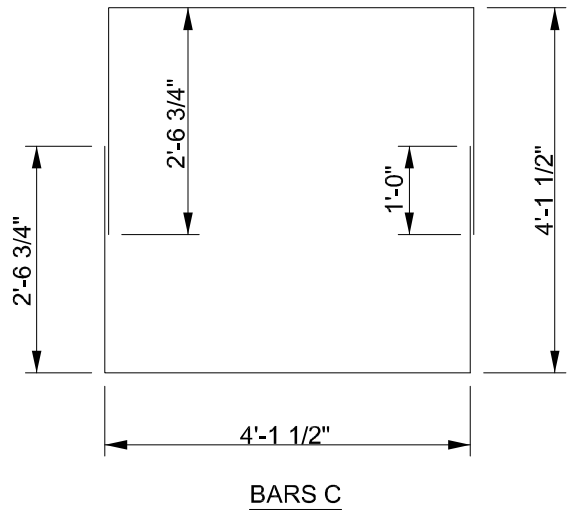
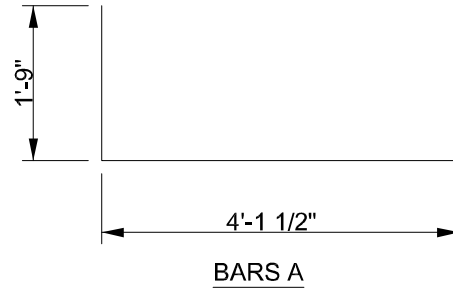
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STANDARD NO.
DET-402-04
4 OF 4



TOP SLAB PLAN VIEW



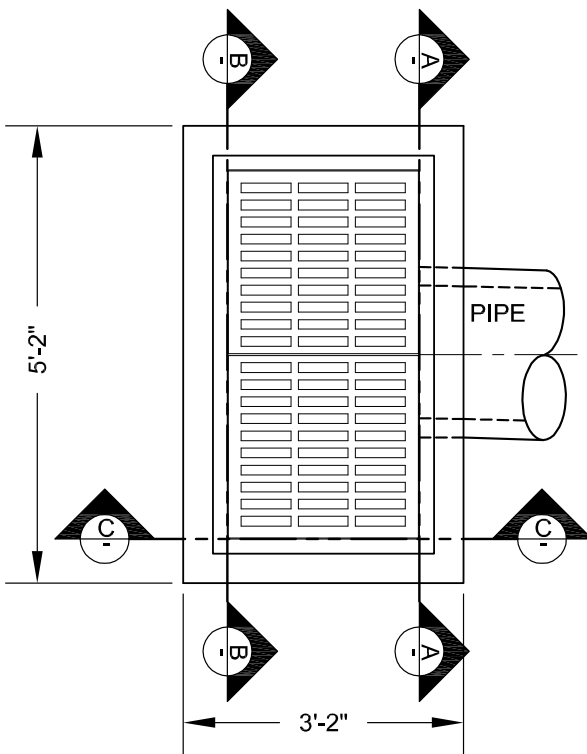
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4 SIDED AREA INLET

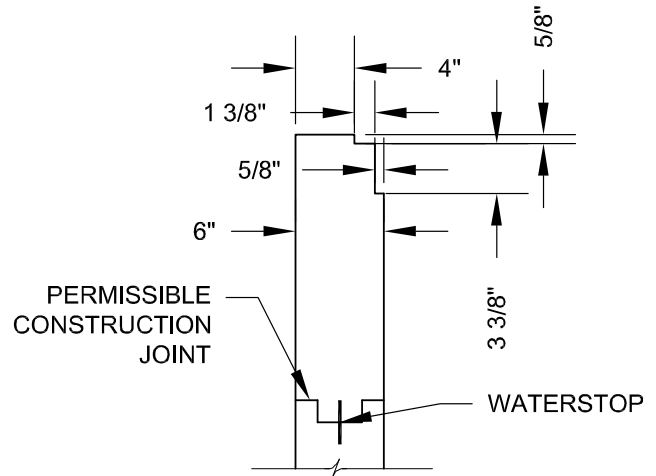
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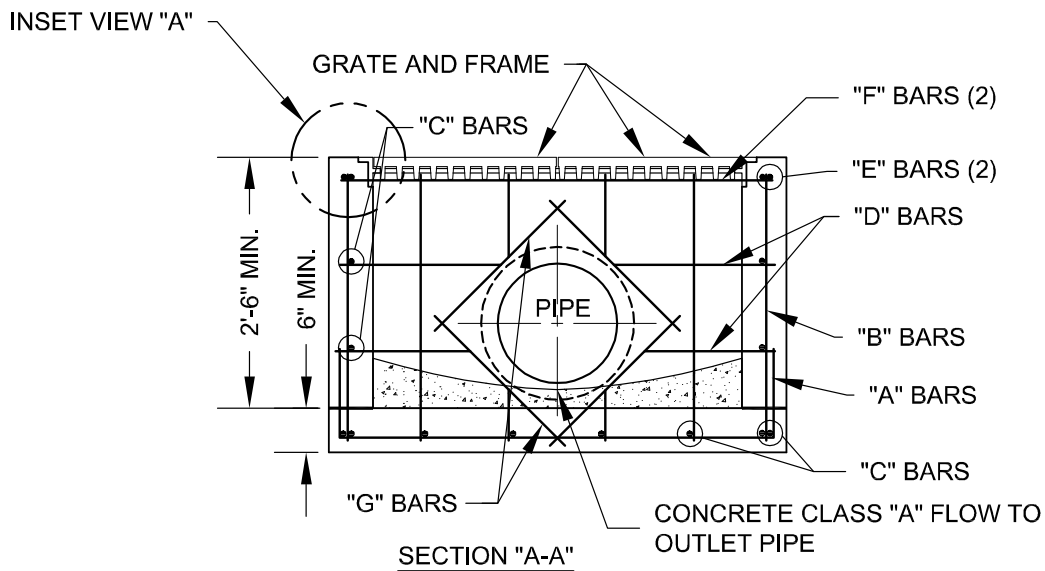
STANDARD NO.
DET-402-07
1 OF 2



PLAN VIEW



INSET VIEW "A"



SECTION "A-A"

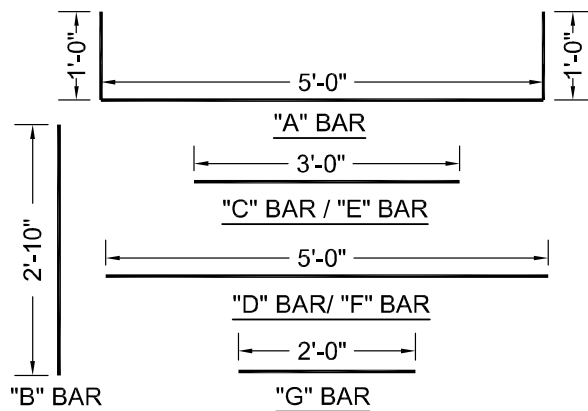
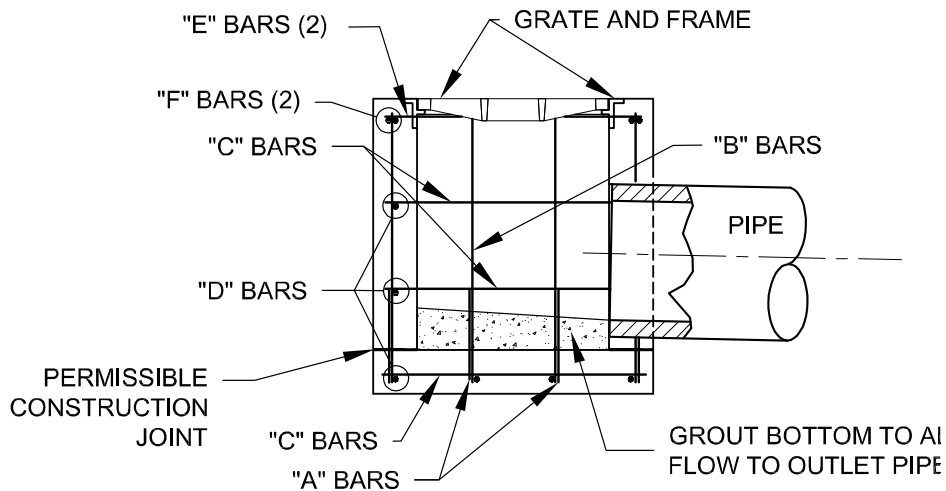
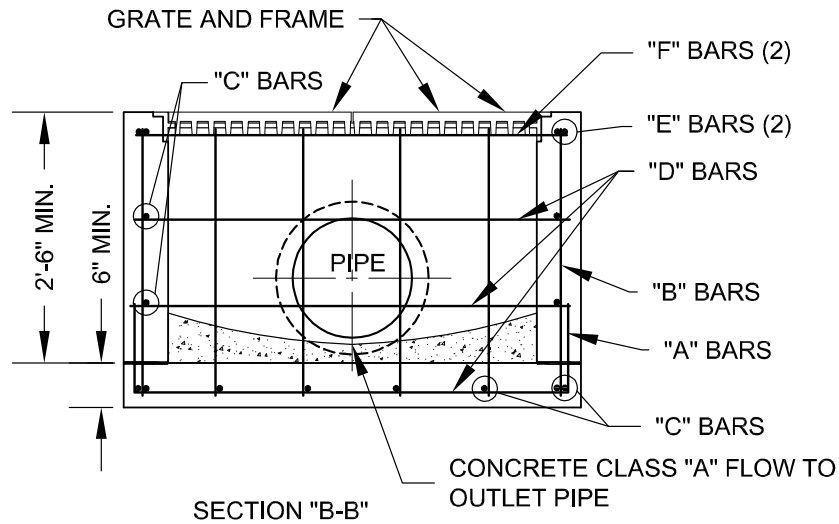


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DROP INLET

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ADOPTED 8/18/11
REVISED 6/25/15

STANDARD NO.
DET-402-08
1 OF 2



REINFORCING STEEL SCHEDULE					
BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	1'-0"	7'-0"	19
B	16	4	1'-0"	2'-10"	30
C	12	4	1'-0"	3'-0"	24
D	8	4	1'-0"	5'-0"	27
E	4	5	1'-0"	3'-0"	13
F	4	5	1'-0"	5'-0"	22
G	4	4	AS SHOWN	2'-0"	6
TOTAL WEIGHT = 141 LB.					

BAR LENGTHS AND SHAPES ARE FOR THE MINIMUM INLET DIMENSIONS AS SHOWN ON THIS DETAIL. FOR ALTERNATIVE SIZE, A DETAIL, SIGN AND SEALED BY AN ENGINEER MUST BE PROVIDED FOR APPROVAL TO THE CITY.

NOTE:

1. RATE AND FRAME DIMENSIONS RE BASED ON NEENAH R-6673L.
2. REINFORCING STEEL SHALL BE CUT AS NEEDED TO ACCOUNT FOR THE PIPE OUTLET AS SHOWN ON SECTION A-A.
3. MINIMUM 1" OF CLEAR COVER FOR REINFORCING STEEL ALL AROUND.



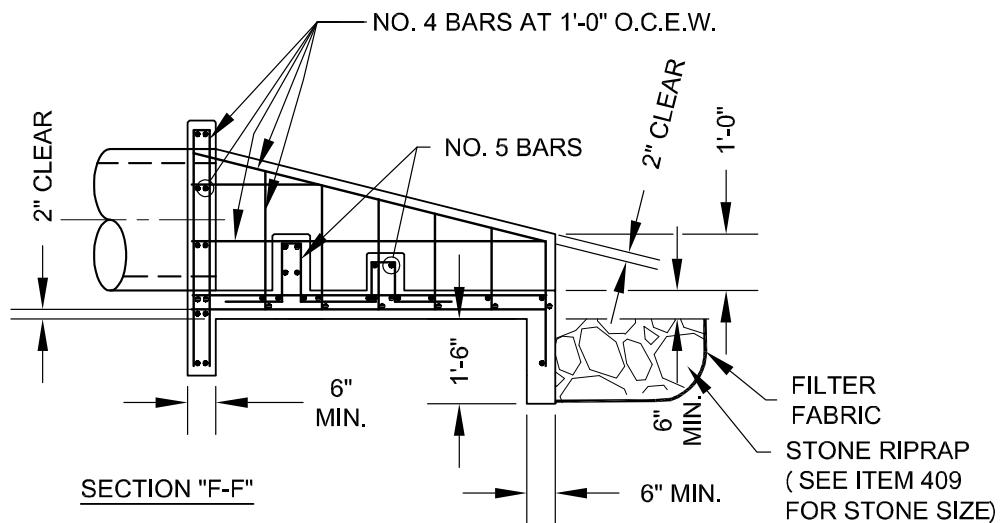
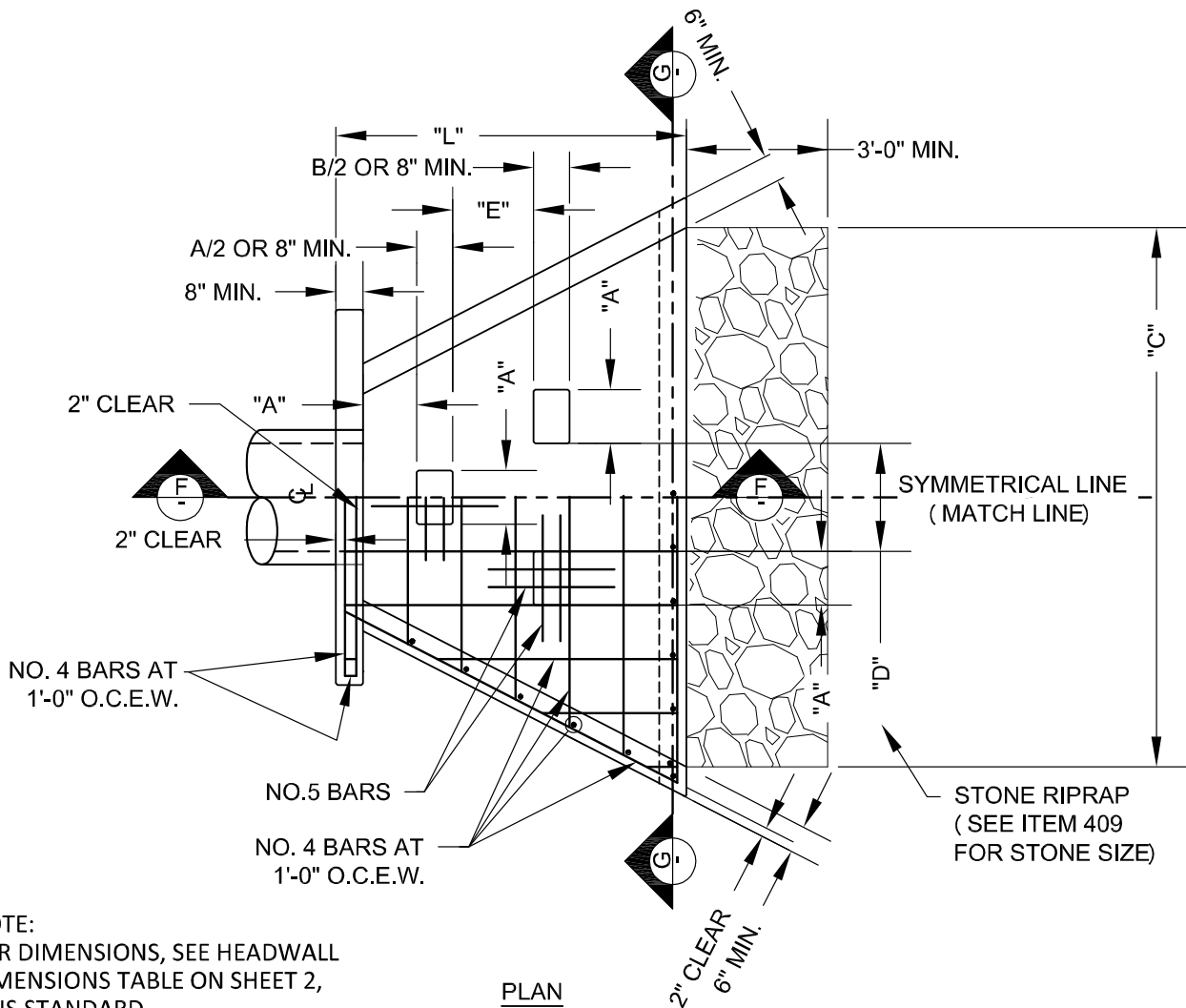
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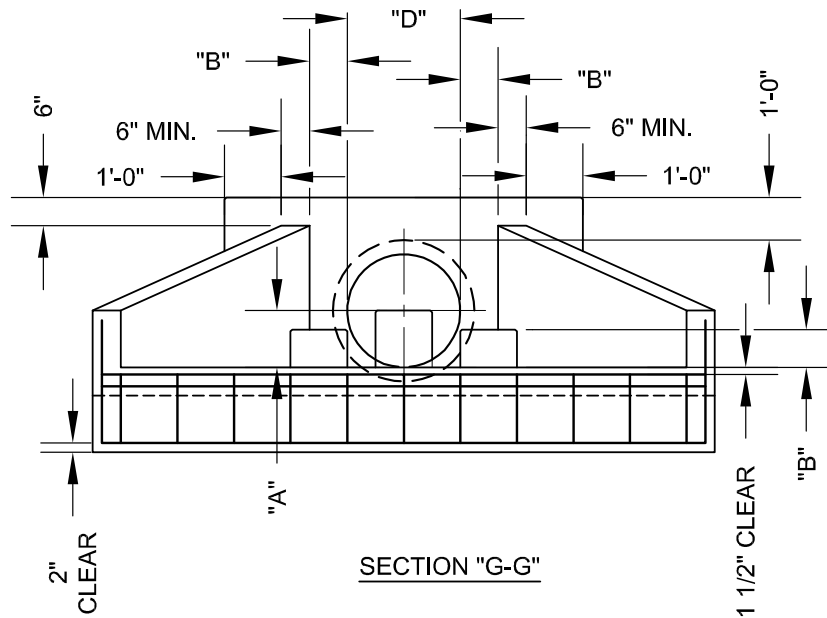
STANDARD NO.
DET-402-08
2 OF 2



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HEADWALL WITH ENERGY DISSIPATORS	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
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ADOPTED	8/30/11
REVISED	12/4/15
STANDARD NO.	
DET-402-09	
1	OF 2

PRAP
M 409
(SEE SIZE)



HEADWALL DIMENSIONS

A (IN)	9	10	12	14	15	16	18	21	24	27	30
B (IN)	6	7	8	9	10	11	12	14	16	18	20
C (IN)	90	105	120	135	150	165	180	210	240	270	300
D (IN)	18	21	24	27	30	33	36	42	48	54	60
E (IN)	12	14	16	18	20	22	24	28	32	36	40
L (IN)	54	63	72	81	90	99	108	126	144	162	180

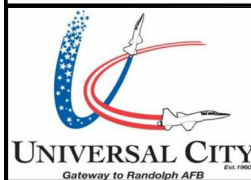
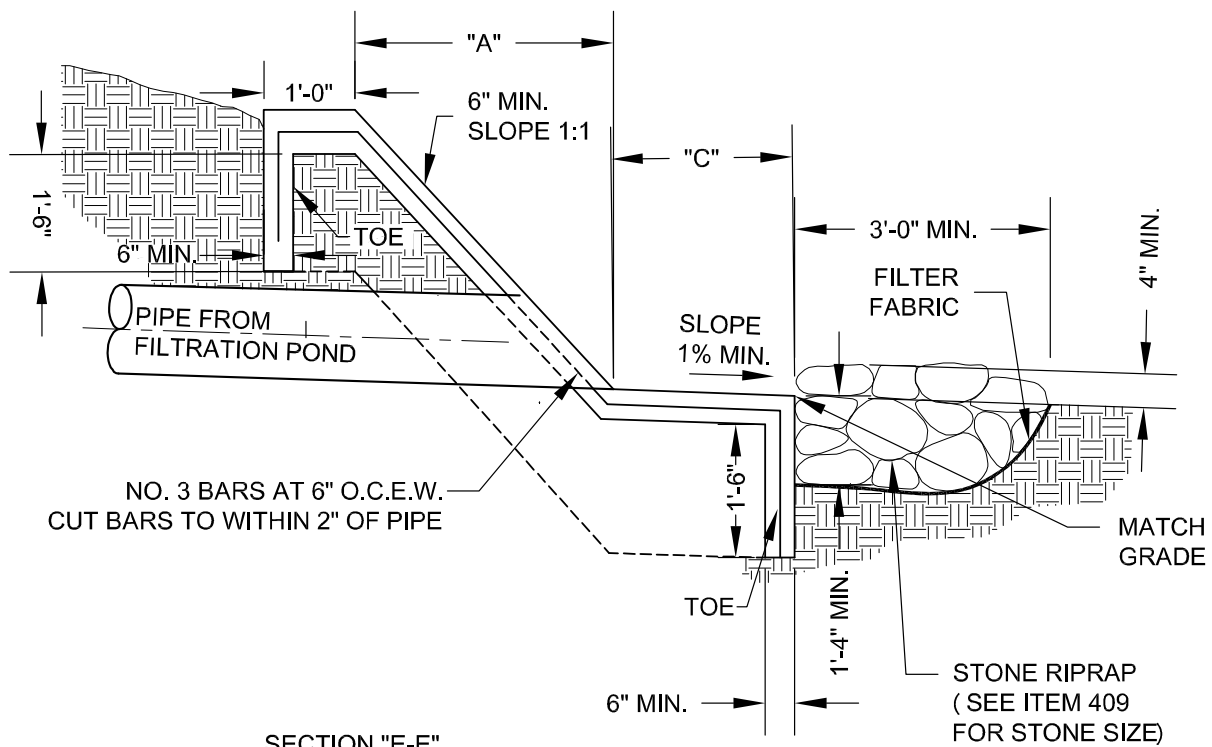
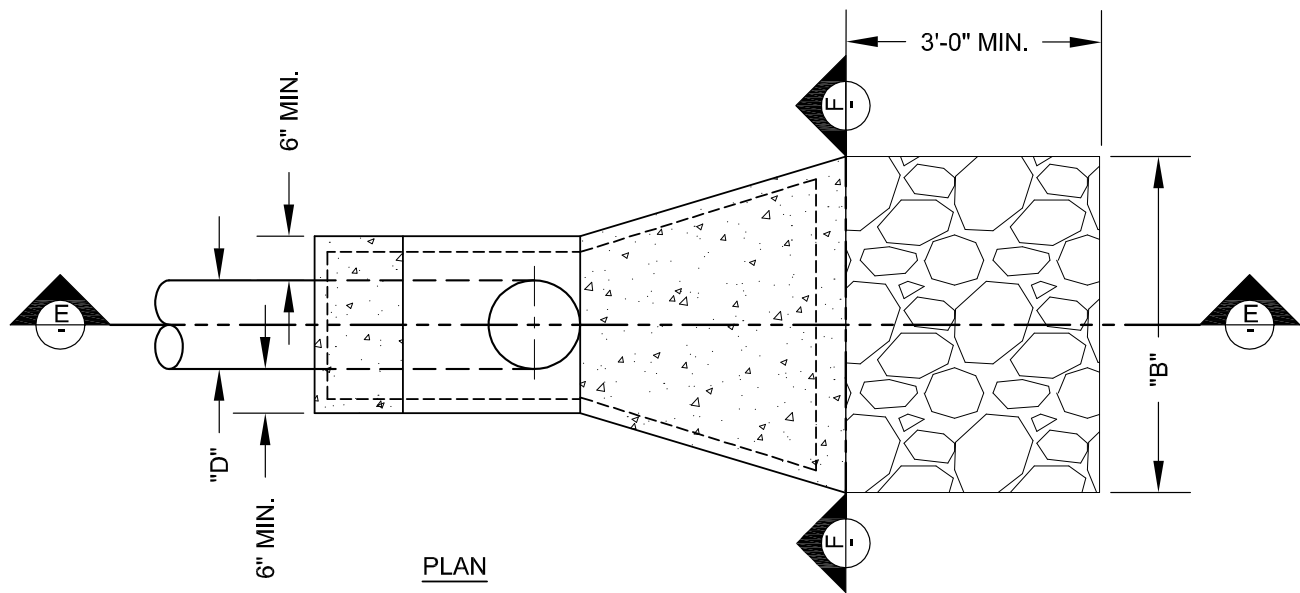
NOTES:

1. ALL CONCRETE SHALL BE CLASS "C", 3,600 P.S.I. MINIMUM.
2. CHAMFER ALL EXPOSED EDGES 3/4".
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.
4. DISCHARGE VELOCITIES GREATER THAN 10 FPS REQUIRE ROCK OUTLET PROTECTION.
5. ALL REINFORCING STEEL SHALL BE GRADE 60.
6. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
7. NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED.



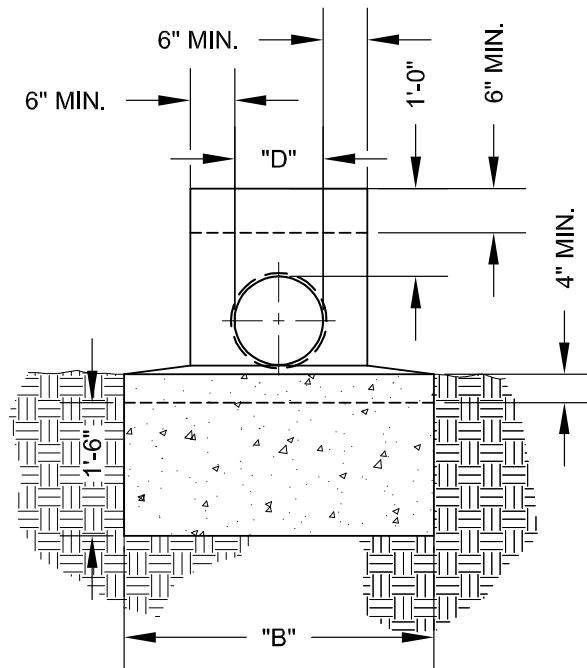
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HEADWALL WITH ENERGY DISSIPATORS	
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STANDARD NO. DET-402-09 2 OF 2



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HEADWALL FOR FILTRATION PONDS	
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SECTION "F-F"

HEADWALL DIMENSIONS

D (IN)	6	8	10	12	15
A (IN)	18	20	22	24	27
B (IN)	30	32	34	42	51
C (IN)	24	24	30	36	48

NOTES:

1. ALL CONCRETE SHALL BE CLASS "C", 3,600 P.S.I. MINIMUM.
2. CHAMFER ALL EXPOSED EDGES 3/4".
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.
4. DISCHARGE VELOCITIES GREATER THAN 10 FPS REQUIRE ROCK OUTLET PROTECTION.
5. ALL REINFORCING STEEL SHALL BE GRADE 60.
6. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
7. NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED.



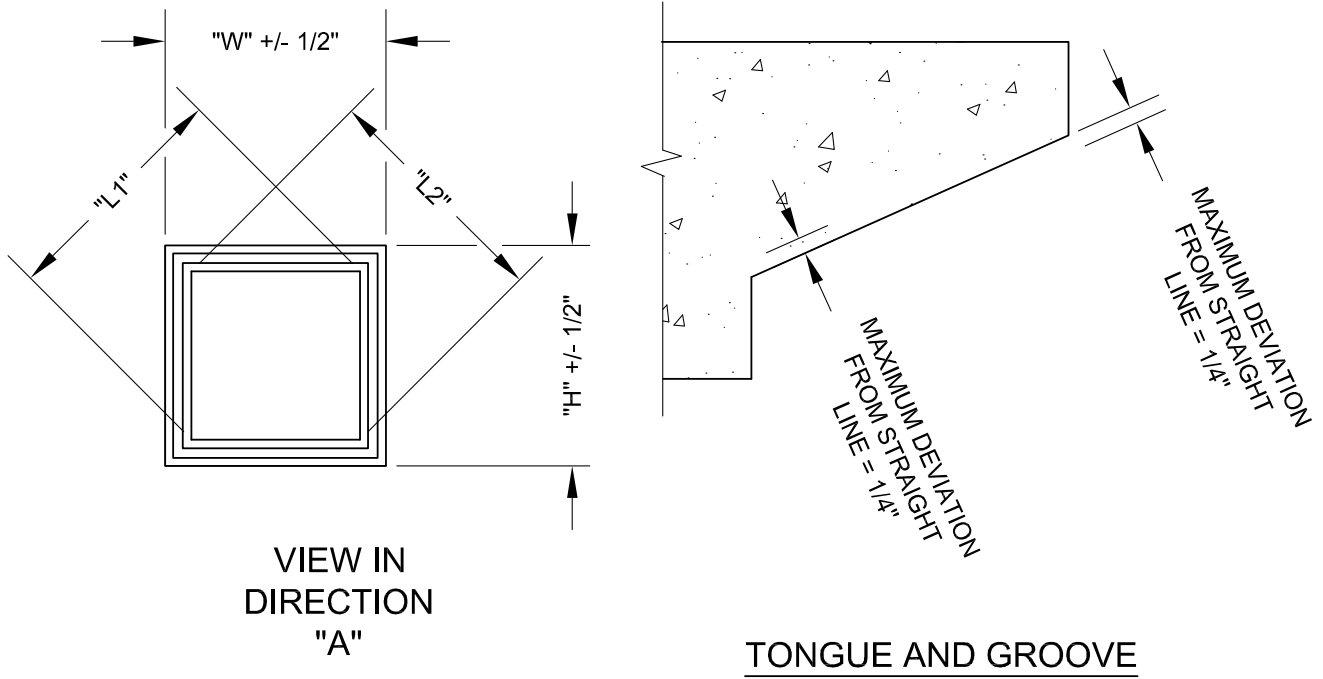
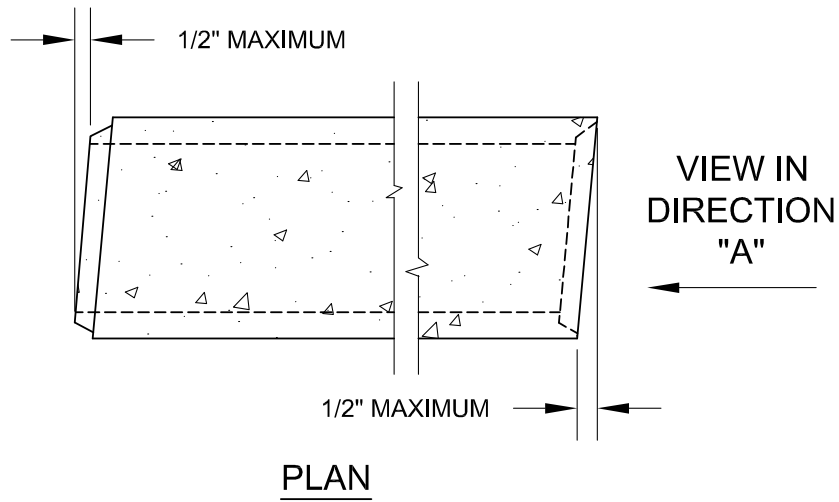
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HEADWALL FOR FILTRATION PONDS


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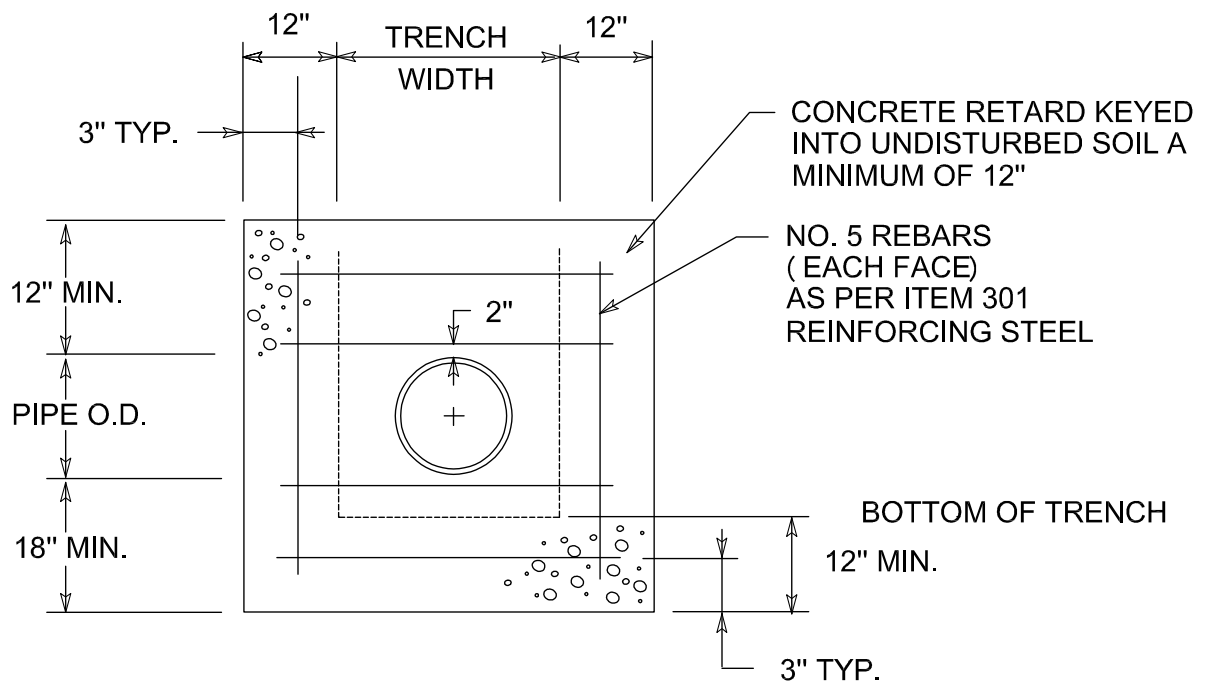
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DET-402-10
2 OF 2

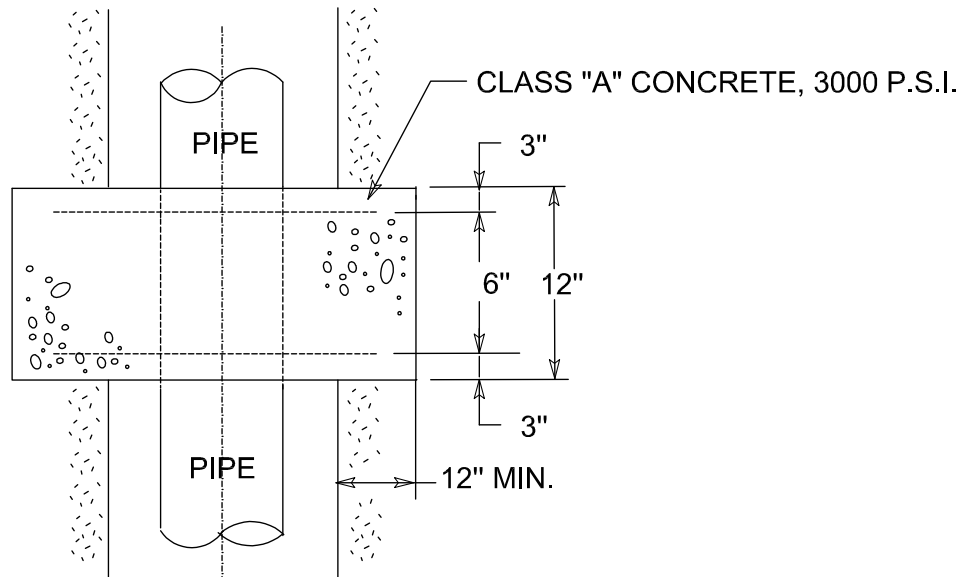


NOTE:
1. "L1" MINUS "L2" = 1/2" MAXIMUM.

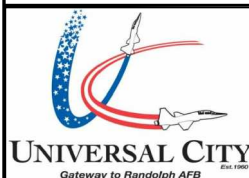
 UNIVERSAL CITY <i>Gateway to Disneyland AEB</i> <small>EST. 1970</small>	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/30/11 REVISED 6/25/15
	FABRICATION TOLERANCES FOR PRECAST BOX CULVERT		STANDARD NO. DET-402-16 1 OF 1
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ELEVATION



TOP VIEW

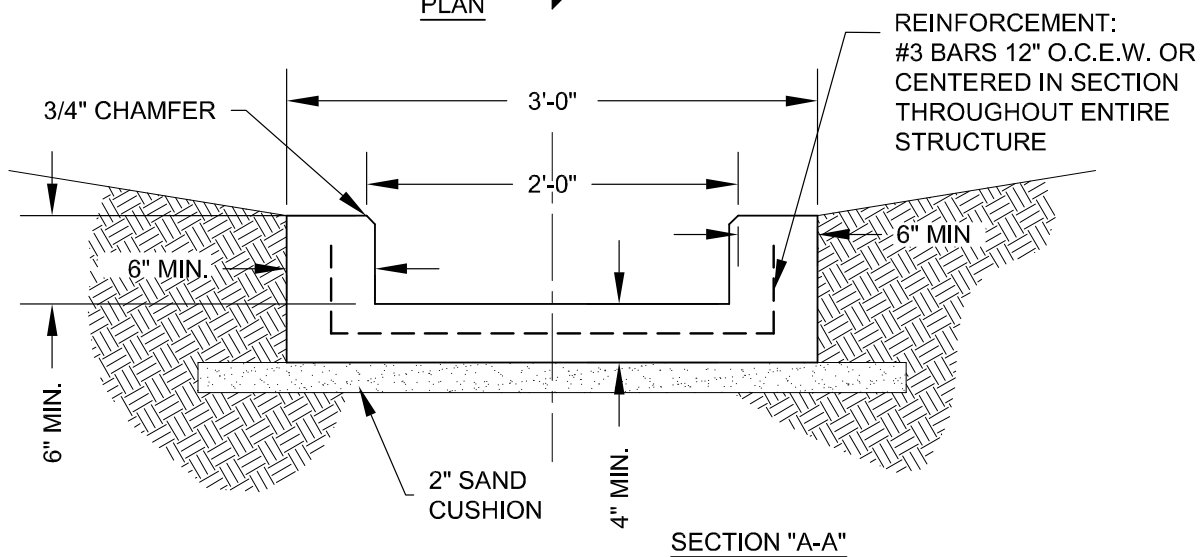
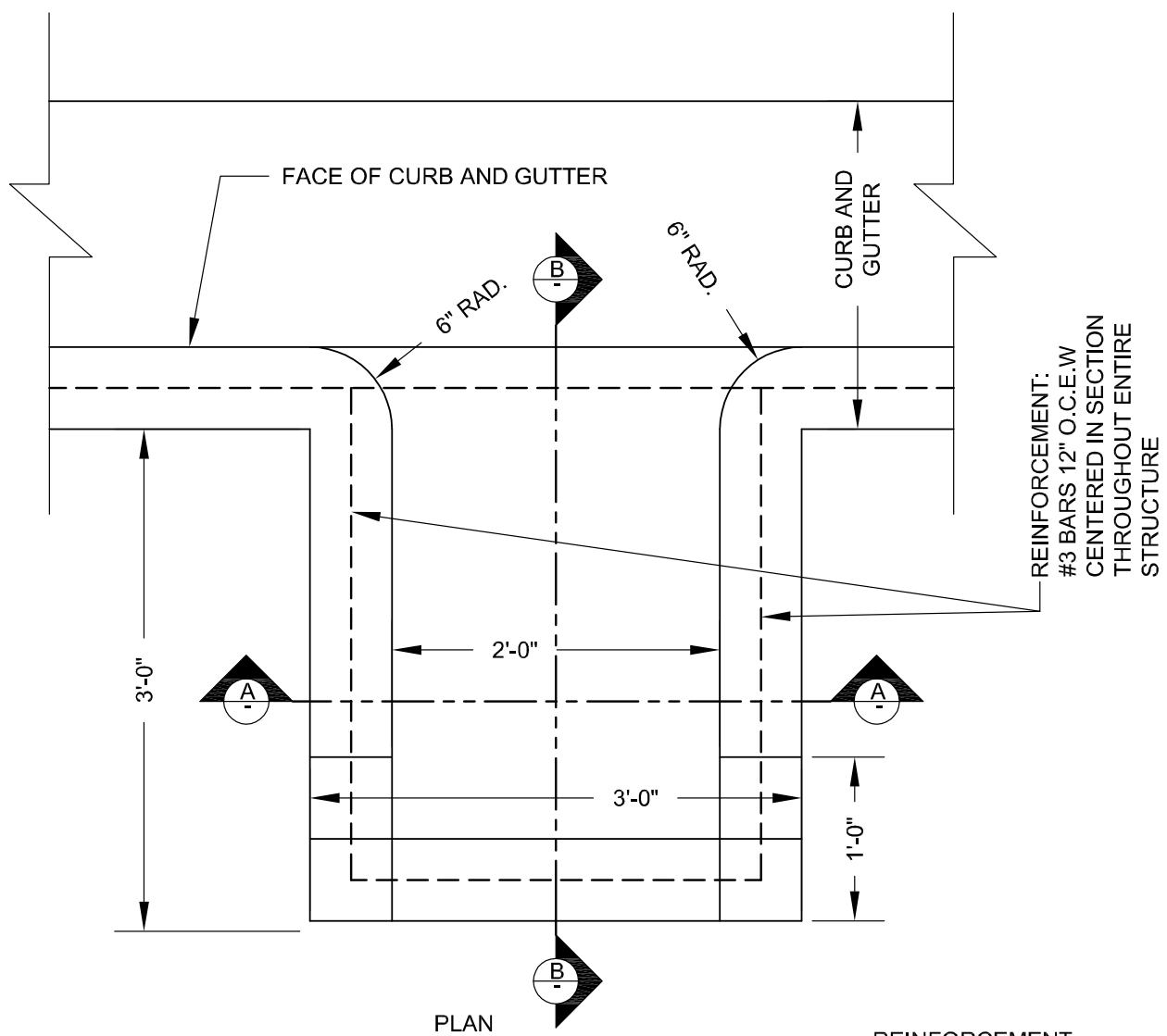


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CONCRETE RETARD

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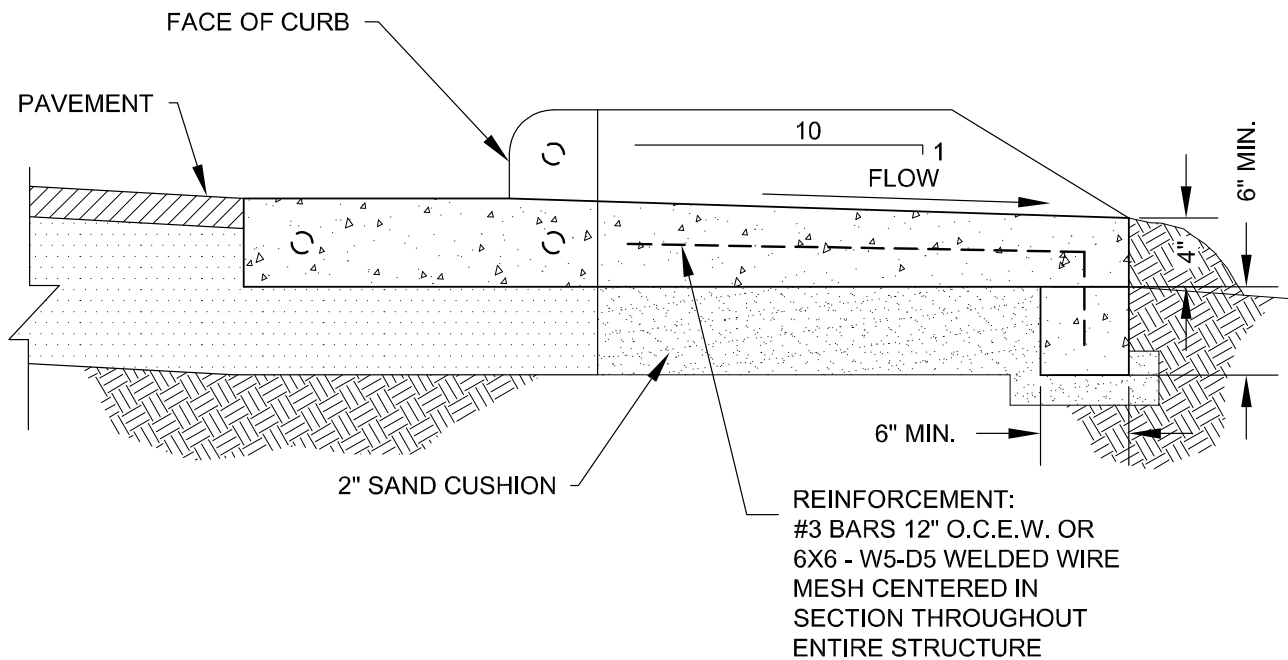
ADOPTED 8/30/11
REVISED 6/25/15

STANDARD NO.
DET-402-17
1 OF 1



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CURB DRAINAGE OPENING WITH FLUME	
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STANDARD NO. DET-402-18 1 OF 2	



SECTION "B-B"

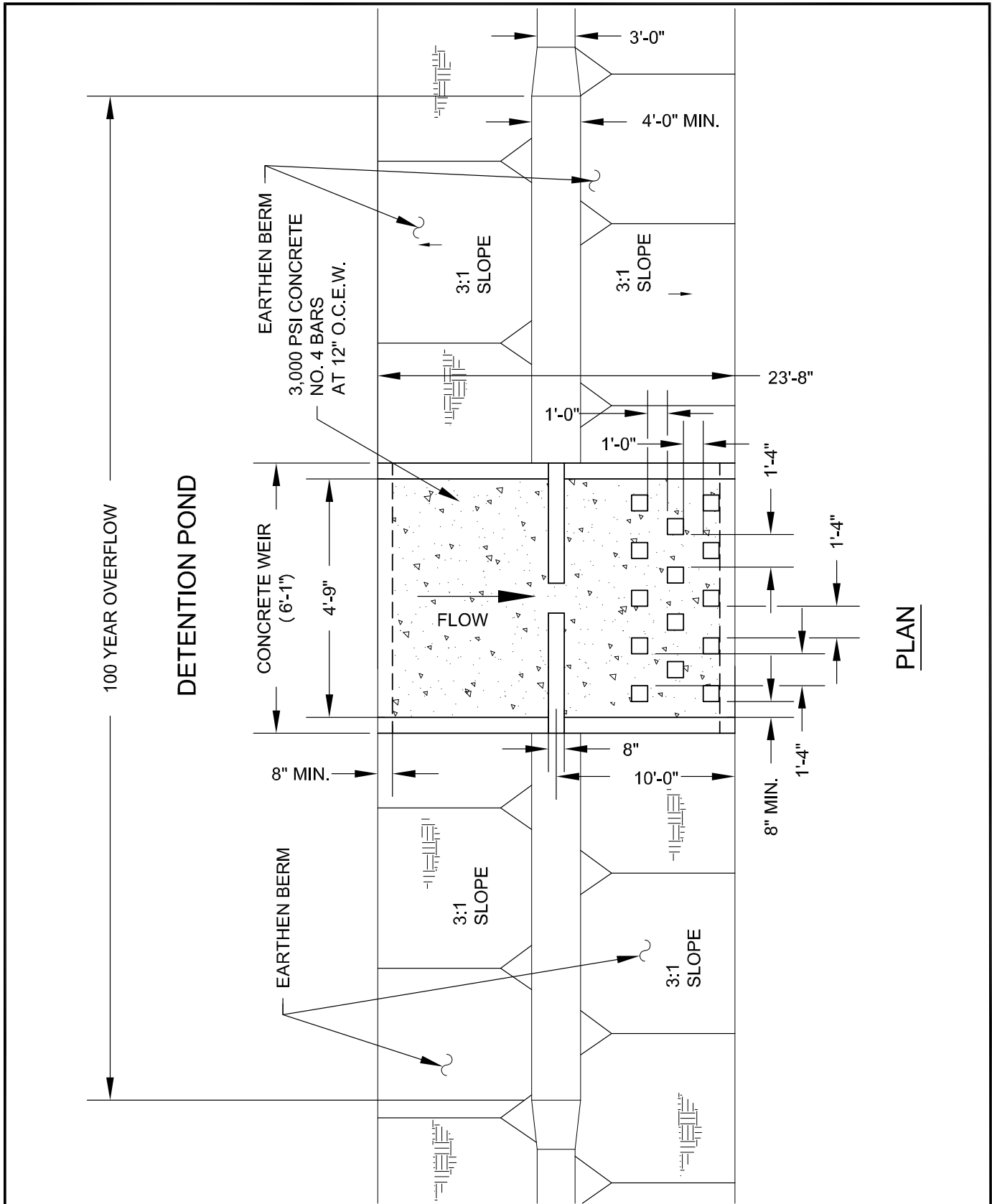
NOTE:


1. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".

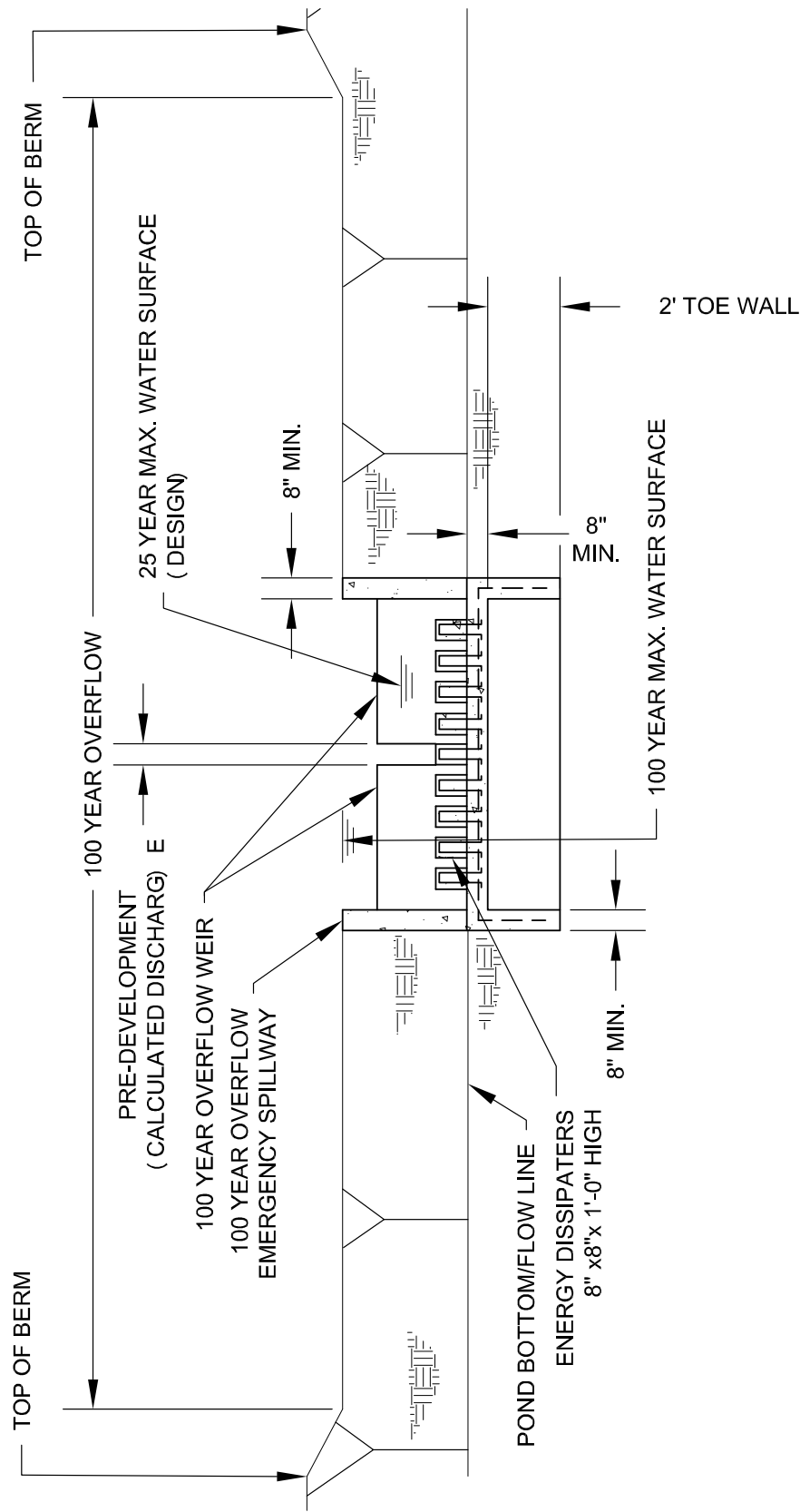


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CURB DRAINAGE OPENING WITH FLUME	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
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STANDARD NO.
DET-402-18
2 OF 2

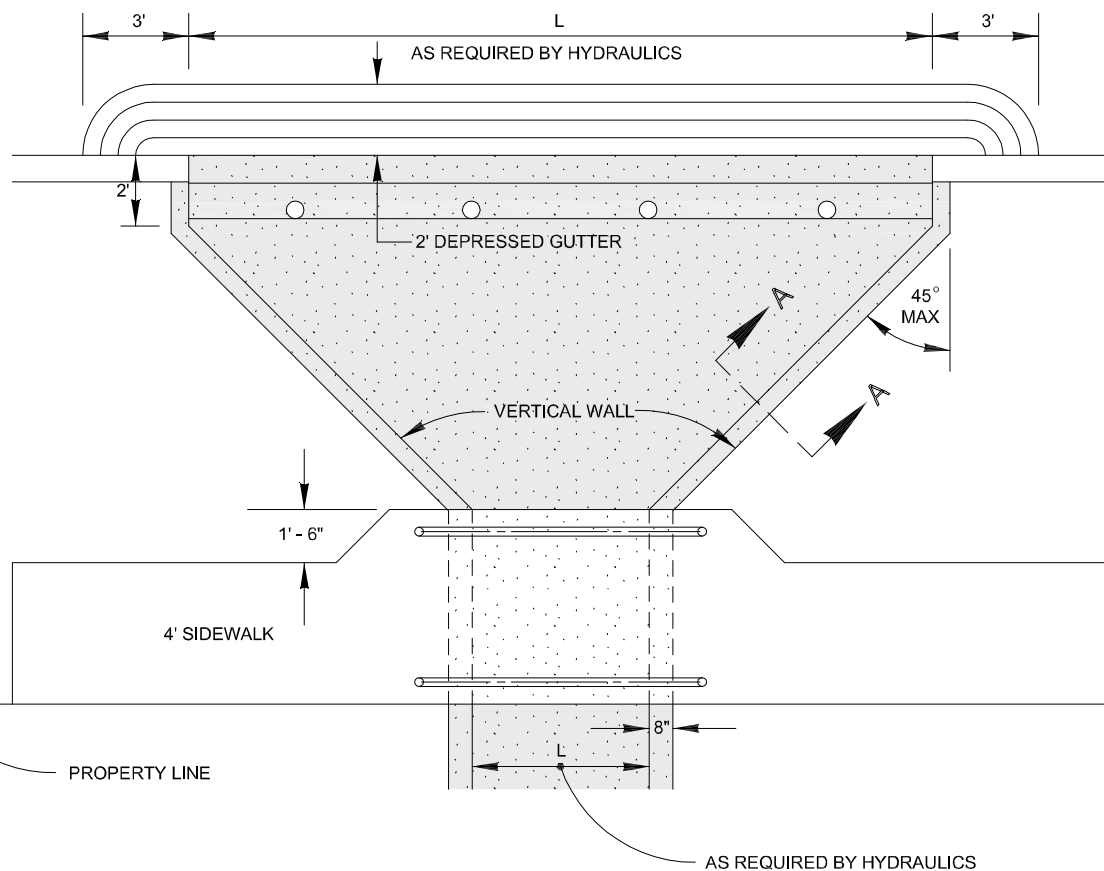
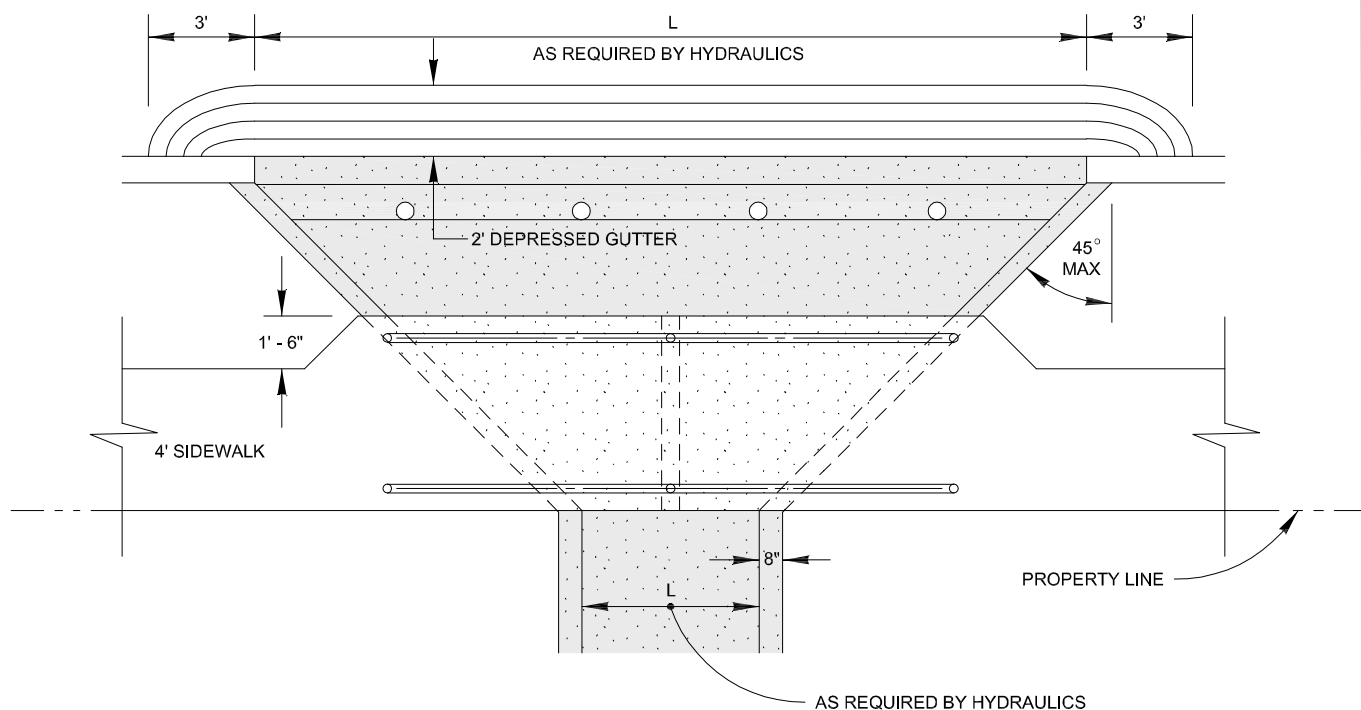


 UNIVERSAL CITY <i>Gateway to Baghdad AEB</i> <small>Est. 1980</small>	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/30/11 REVISED 12/4/15
	STORM DRAIN OUTLET STRUCTURE		STANDARD NO.
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		DET-402-19
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ELEVATION

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	STORM DRAIN OUTLET STRUCTURE		STANDARD NO. DET-402-19
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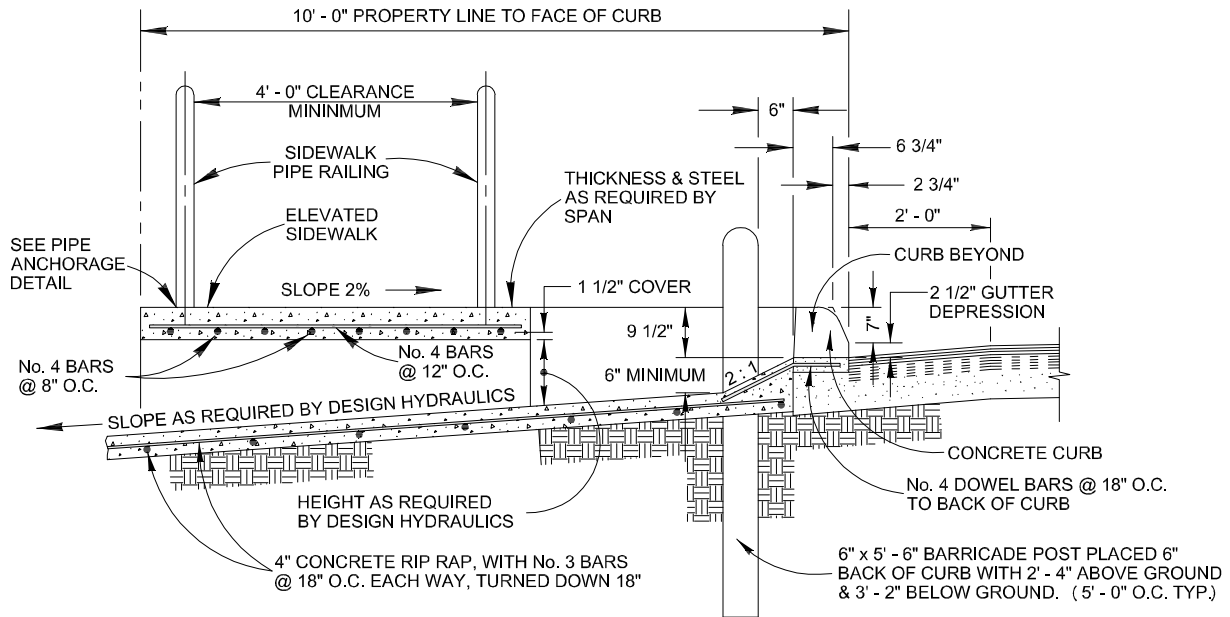
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STORM DRAIN ELEVATED SIDEWALK

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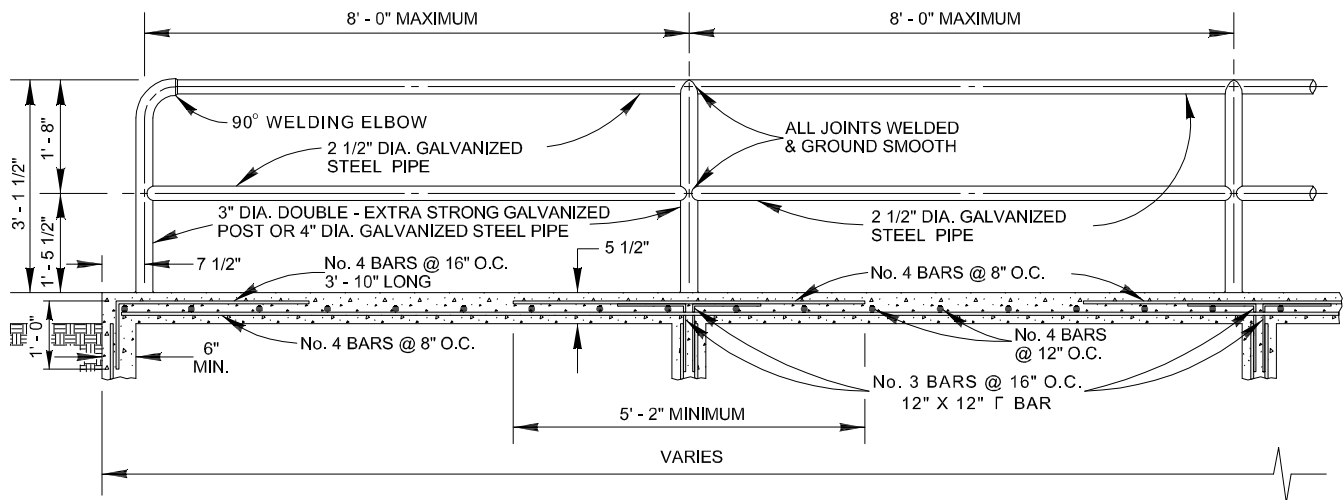
ADOPTED 8/30/11
REVISED 7/21/15

STANDARD NO.
DET-402-20
1 OF 3



- NOTE: 1. ALLOW FOR REFLECTOR BUTTONS ON BARRICADE POST. USE 2" x 2" BUTTON PER POST.
2. POST SHALL RECEIVE TWO COATS OF ALUMINUM PAINT.

ELEVATED SIDEWALK & DROP CURB DETAILS FOR DRAINAGE CHANNELS



TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

STORM DRAIN ELEVATED SIDEWALK

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 8/30/11
REVISED 7/21/15

STANDARD NO.
DET-402-20
2 OF 3

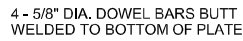
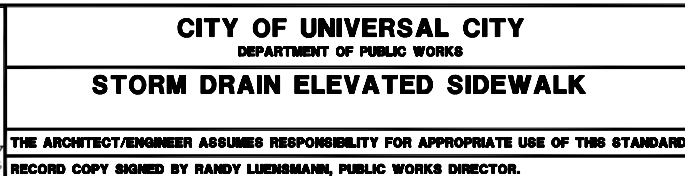
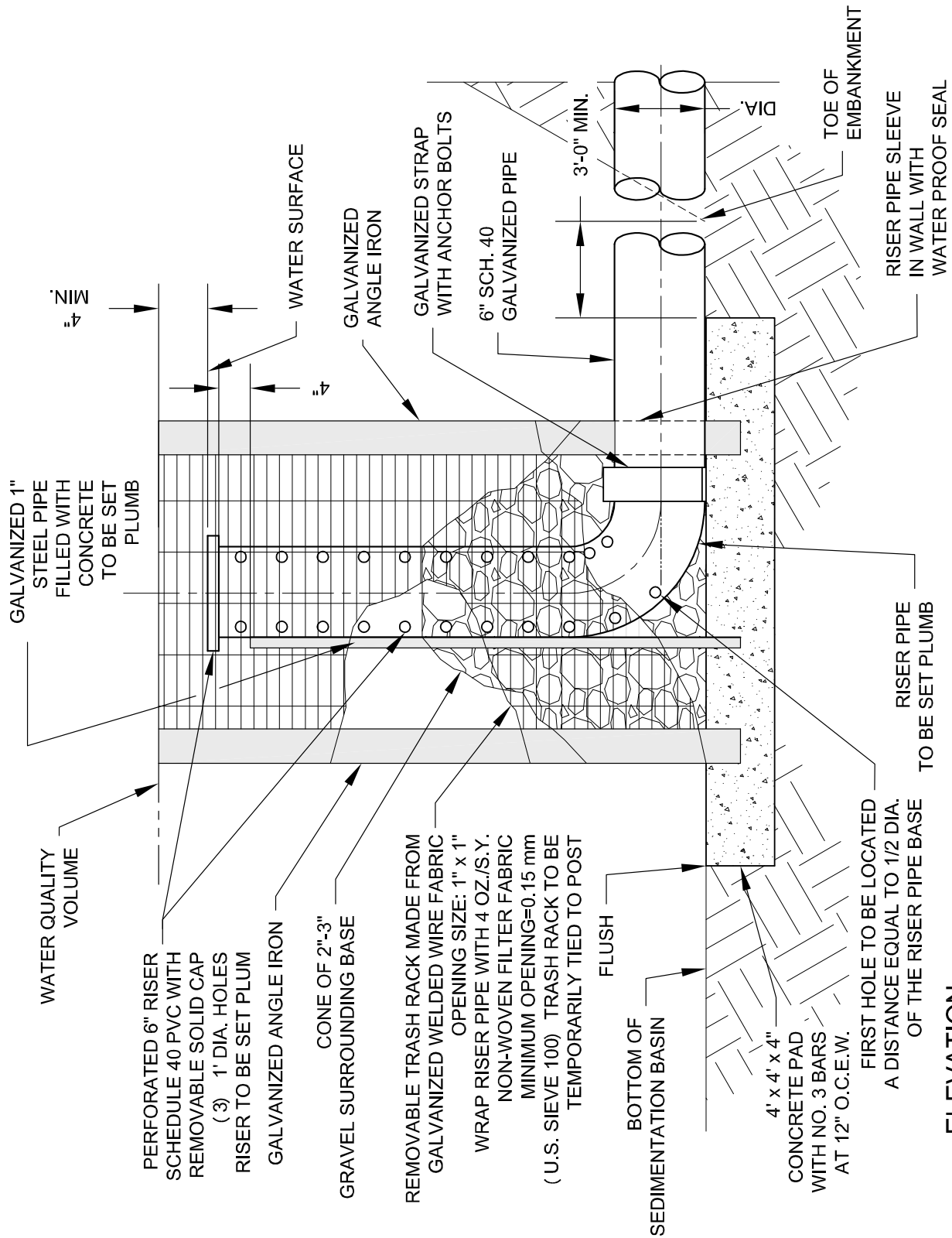


Diagram illustrating the reinforcement details for a 90-degree corner joint. The horizontal bar has a 4" lap, and the vertical bar has a 6" lap. The reinforcement is specified as No. 3 BARS @ 18" O.C. The diagram shows the lap detail with a 4" gap and a 6" overlap.

SECTION A-A



STANDARD NO.
DET-402-20
3 OF 3



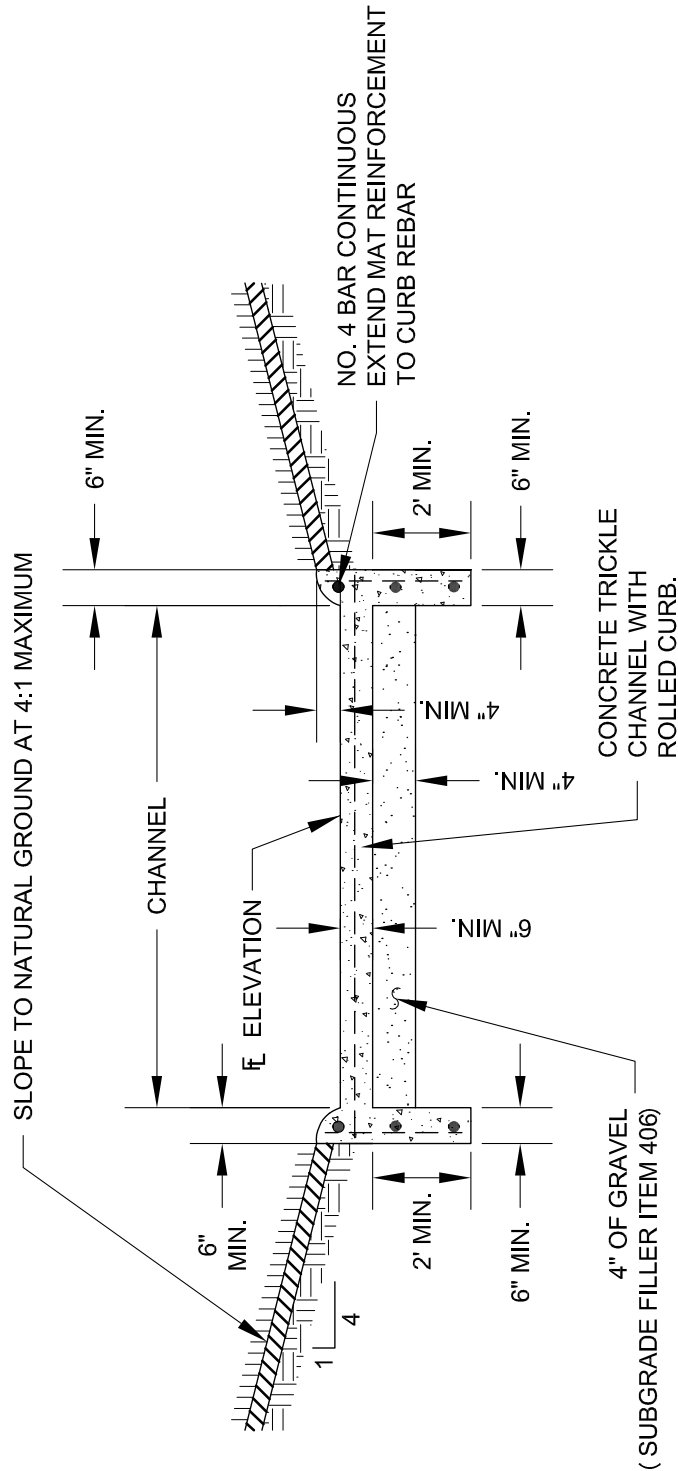
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

STORM DRAIN RISER PIPE WITH OUTLET

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/30/11
REVISED 7/21/15

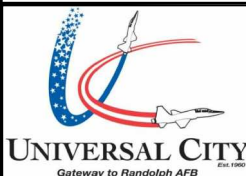
STANDARD NO.
DET-402-21
2 OF 2



ELEVATION

NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" 3000 P.S.I. MINIMUM UNLESS OTHERWISE SHOWN.
2. CONCRETE THICKNESS SHALL BE 6" MINIMUM.
3. DITCH TOEDOWN SHALL BE 2' DEEP BY 6" WIDTH MINIMUM AS SHOWN ON THE DETAIL.
4. REINFORCING STEEL SHALL BE #4 BARS SPACED AT 18" O.C.E.W. GRADE 60.
5. PROVIDE TOOLED JOINTS AT 10'-0" O.C. WITH DOWELS AND EXPANSION JOINTS AT 40'-0" O.C.
6. NEW RIPRAP SHOULD BE ATTACHED TO EXISTING BY #4 BARS DOWELED 6" INTO EXISTING RIPRAP. THESE BARS ARE TO BE SPACED AT 18" O.C. AND HAVE A LENGTH OF 18".
7. PROVIDE 4" OF TOPSOIL AND RE-VEGETATE WITH GRASS SOD OR HYDRAULIC SEEDING STABILIZED WITH EROSION CONTROL MATTING.
8. SLOPE SIDE SLOPES TO NATURAL GROUND AT 4:1 MAXIMUM UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



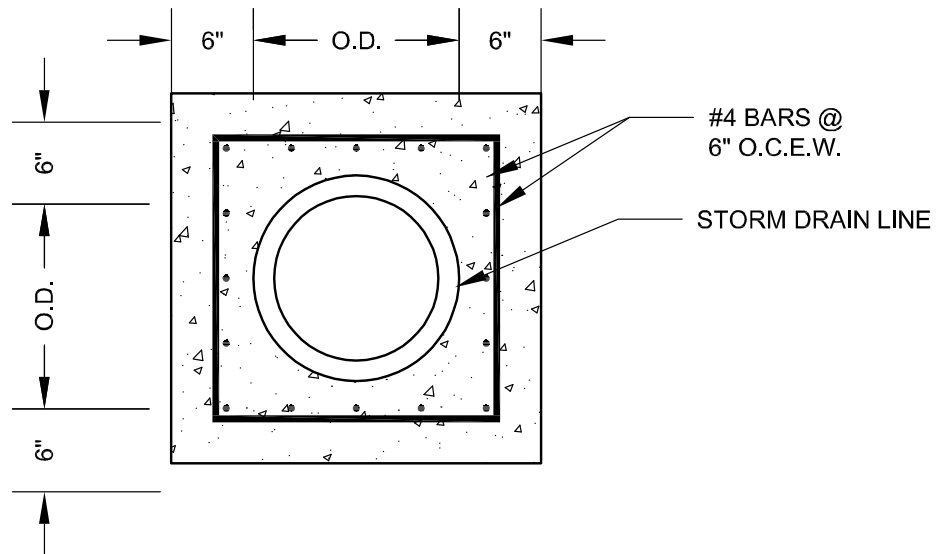
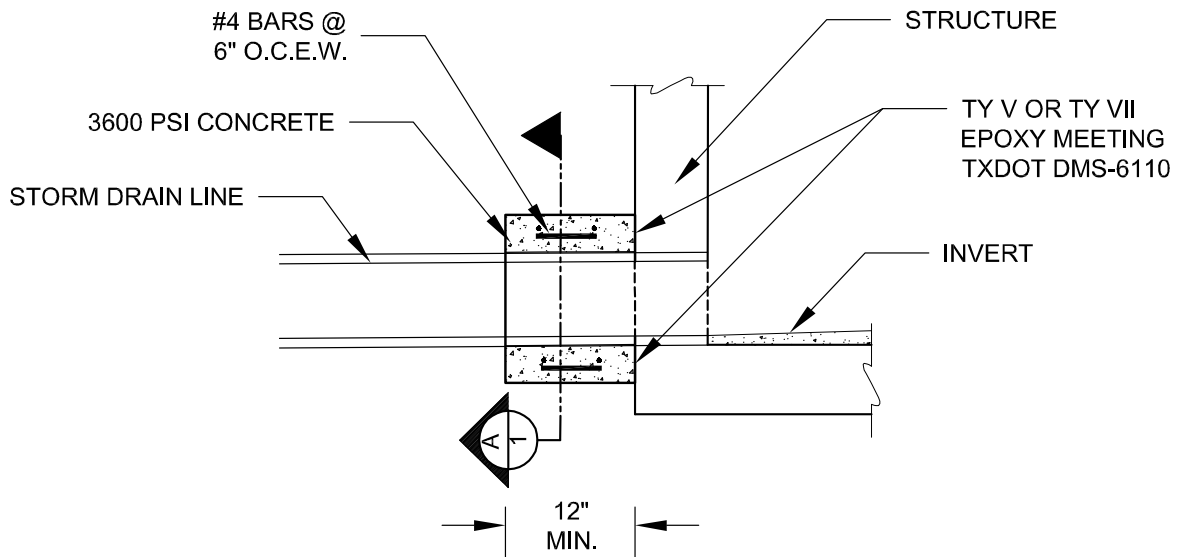
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS

STORM DRAIN CONCRETE TRICKLE CHANNEL (LOW FLOW)

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ADOPTED 8/30/11
REVISED 7/22/15

STANDARD NO.
DET-402-22
1 OF 1



NOTES:

SECTION A-A

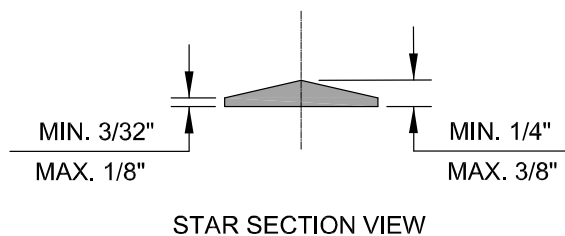
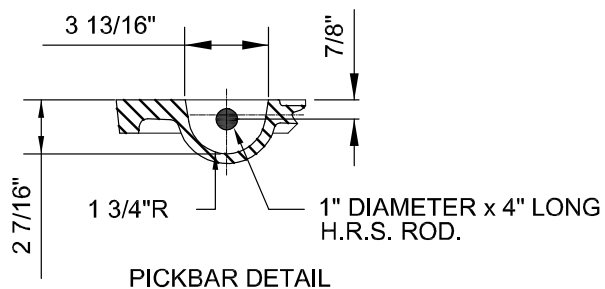
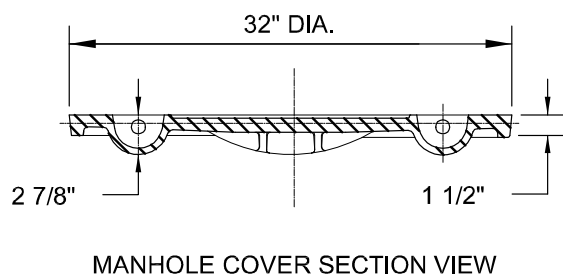
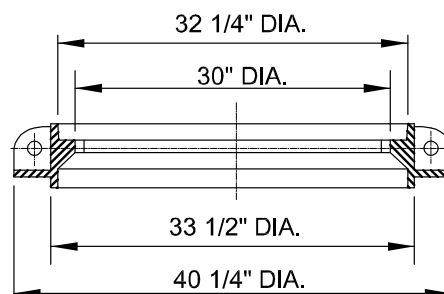
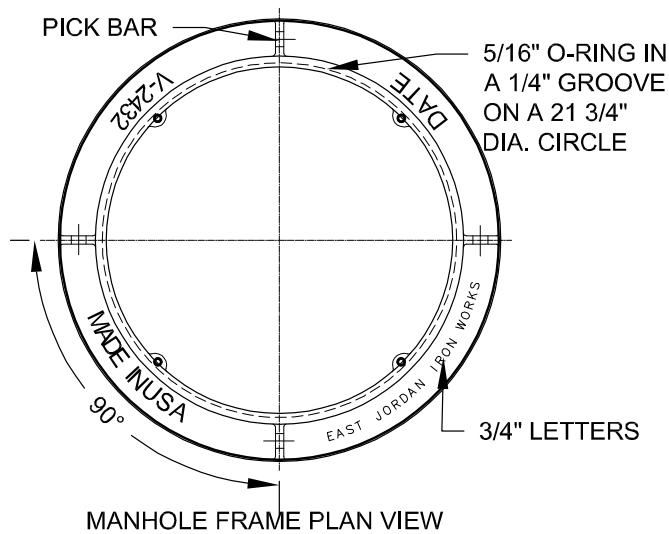
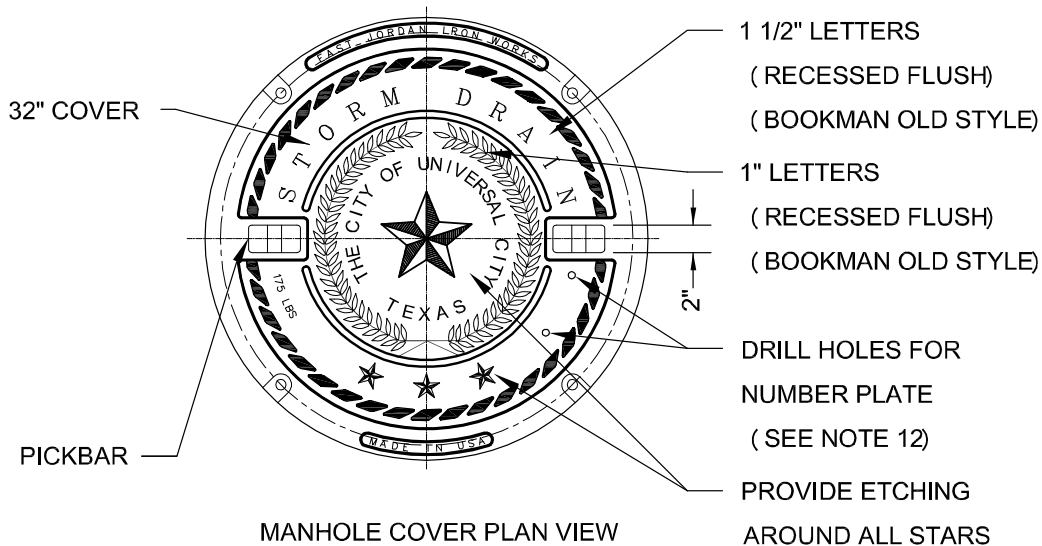
1. NEATLY CUT ALL STORM DRAINS AT THE INSIDE FACE OF THE WALLS OF THE CONNECTING STRUCTURE IN COMPLIANCE WITH THE TXDOT SPECS.
2. USE TY V OR TY VII EPOXY MEETING TXDOT DMS-6110 SPECIFICATION FOR BOND BETWEEN FRESH CONCRETE TO CURED CONCRETE.
3. CONCRETE SHALL BE CLASS "C" 3600 P.S.I. MINIMUM.
4. MAINTAIN A MINIMUM 3" OF CLEAR COVER FOR REINFORCEMENT.
5. CONCRETE COLLAR AS SHOWN IS REQUIRED ON ALL STORM DRAIN TO STRUCTURE CONNECTIONS AND IS SUBSIDIARY TO ITEM 401, "STORM DRAINAGE PIPE."



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
STORM DRAIN CONCRETE COLLAR	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
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ADOPTED 8/18/11
REVISED 9/17/15

STANDARD NO.
DET-402-23
1 OF 1




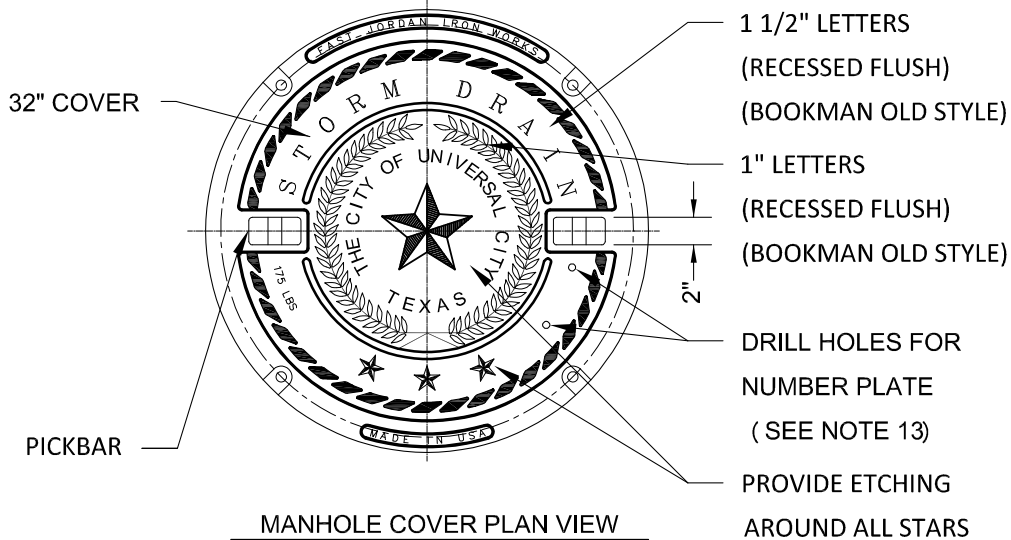
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
NON-BOLTED STORM DRAIN COVER & FRAME	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/18/11 REVISED 6/28/16
STANDARD NO. DET-405-01 1 OF 2

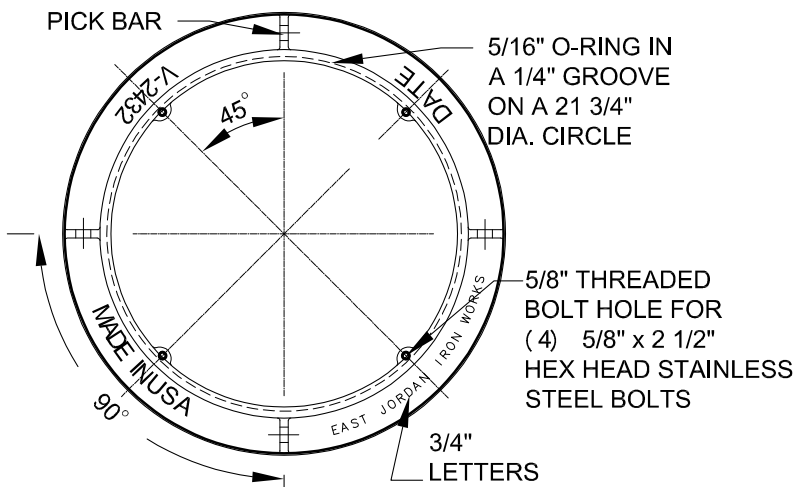
NOTES:

1. COVER AND FRAME SHALL COMPLY WITH SPECIFICATIONS FOR STORM DRAINAGE, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER V-2432-3 (PRODUCT NUMBER 42432032) , AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER V-2432 (PRODUCT NUMBER: 42432010) , AS MANUFACTURED BY EAST JORDAN WORKS, OR AN APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-2432 (PRODUCT NUMBER 42432072) , AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO (2) 1" DIAMETER STEEL PICK BARS.
7. MANHOLE COVER WEIGHT SHALL BE 175 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS, UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. MANUFACTURER SHALL DRILL (2) 3/16" x 1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE DEPARTMENT OF PUBLIC WORKS. TOP HOLE SHALL BE DRILLED 1" ON CENTER FROM THE BOTTOM OF THE PICK BAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" ON CENTER FROM THE TOP HOLE.

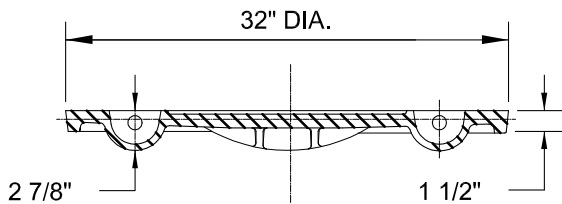
	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 6/25/15
	NON-BOLTED STORM DRAIN COVER & FRAME		STANDARD NO. DET-405-01 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



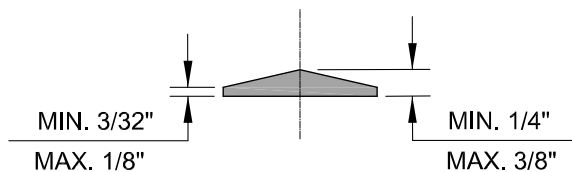
MANHOLE COVER PLAN VIEW



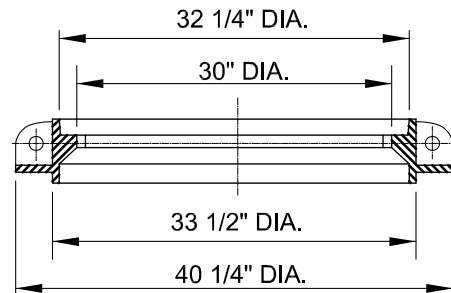
MANHOLE FRAME PLAN VIEW



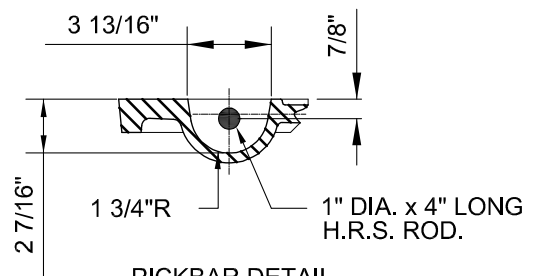
MANHOLE COVER SECTION VIEW



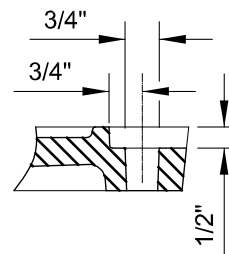
STAR SECTION VIEW



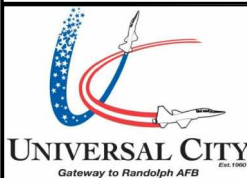
MANHOLE FRAME SECTION VIEW



PICKBAR DETAIL



BOLT HOLE SECTION




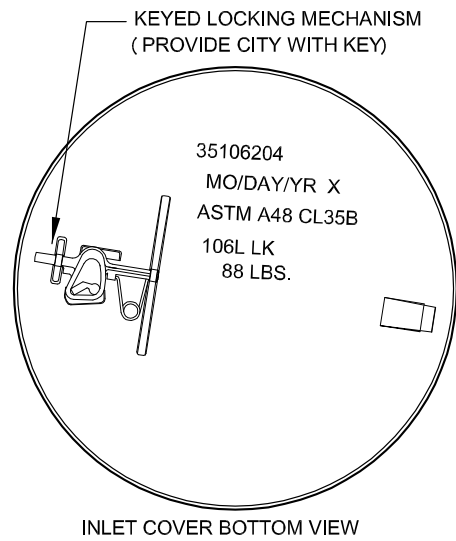
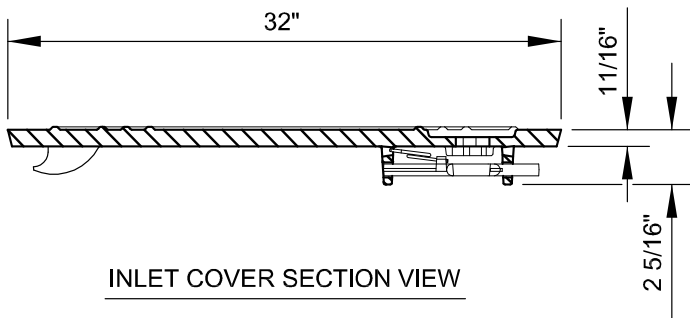
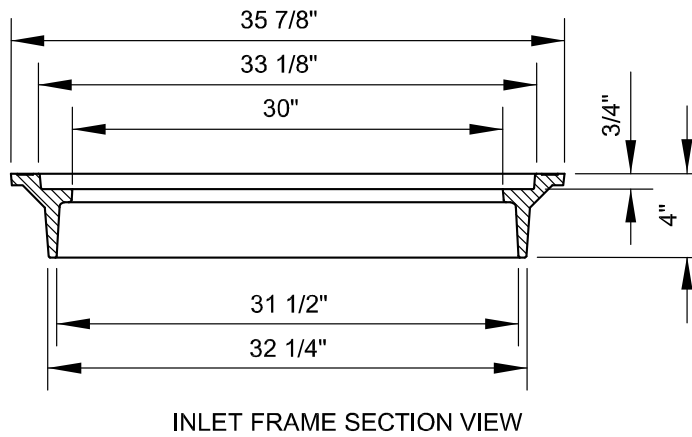
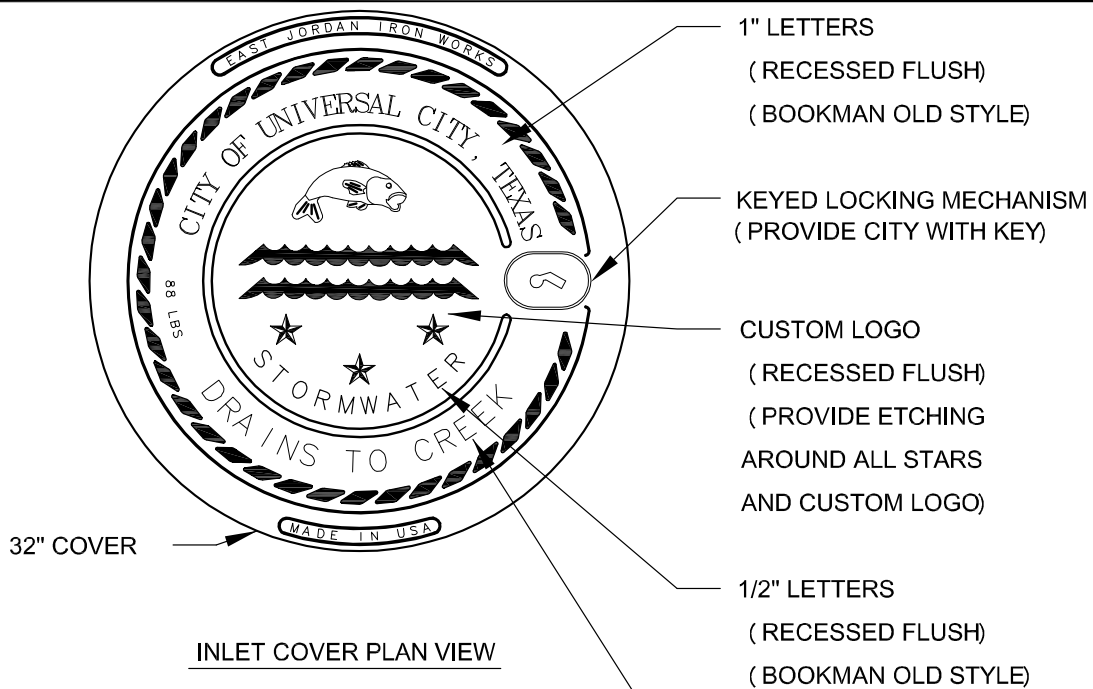
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
BOLTED STORM DRAIN COVER & FRAME	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
RECORD COPY SIGNED BY RANDY LUHMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED	8/30/11
REVISED	6/28/15
STANDARD NO. DET-405-02	
1	OF 2

NOTES:

1. COVER AND FRAME SHALL COMPLY WITH SPECIFICATIONS FOR STORM DRAINAGE, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER V-2432-3 (PRODUCT NUMBER 42432032) ,AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER V-2432 (PRODUCT NUMBER:42432010) ,AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-2432 (PRODUCT NUMBER 42432072) , AS MANUFACTURED BY EAST JORDAN IRON WORKS OR AN APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO (2) 1" DIAMETER STEEL PICK BARS.
7. MANHOLE COVER WEIGHT SHALL BE 175 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS, UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. BOLTS SHALL BE 5/8"-11NC x 2" LONG HEX STAINLESS STEEL WITH STAINLESS STEEL WASHER.
13. MANUFACTURER SHALL DRILL (2) 3/16" x 1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE DEPARTMENT OF PUBLIC WORKS.THE TOP HOLE SHALL BE DRILLED 1" ON CENTER FROM THE BOTTOM OF THE PICK BAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" ON CENTER FROM THE TOP HOLE.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/30/11 REVISED 6/28/18
	BOLTED STORM DRAIN COVER & FRAME		STANDARD NO. DET-405-02 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUHNSMANN, PUBLIC WORKS DIRECTOR.		




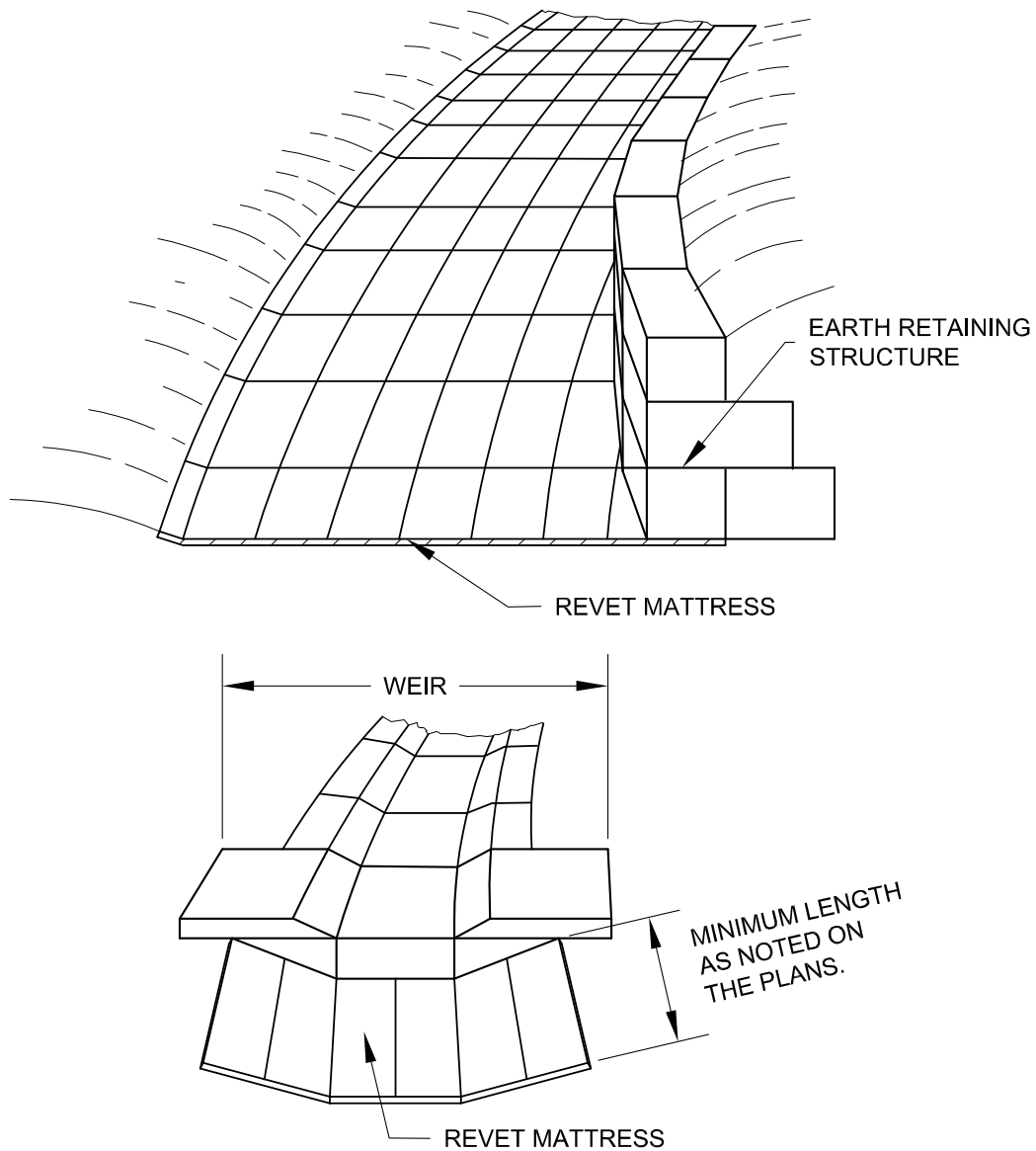
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
STORM SEWER INLET COVER & FRAME	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/18/11 REVISED 6/28/16
STANDARD NO. DET-405-03 1 OF 2

NOTES:


1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, STORM SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. INLET COVER SHALL BE MODEL NUMBER 106LK (PRODUCT NUMBER 35106204) AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
3. INLET FRAME SHALL BE MODEL NUMBER 106LK (PRODUCT NUMBER 35206004) AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
4. INLET COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: 106-4L LK (PRODUCT NUMBER 35506304) , AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. INLET COVER WEIGHT SHALL BE 88 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
7. FILLETS SHALL BE 1/4" RADIUS, UNLESS OTHERWISE SPECIFIED.
8. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
9. INLET COVER SHALL BE DIPPED IN A WATER BASE ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.

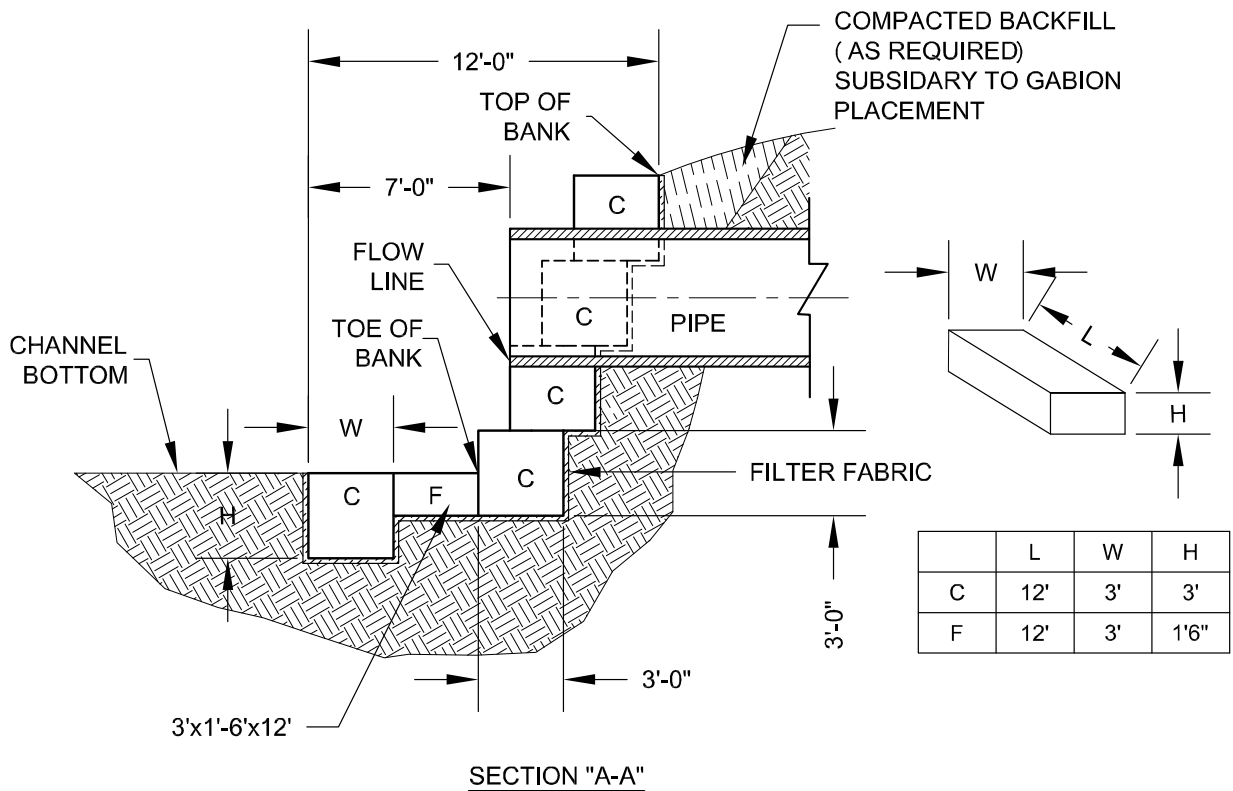
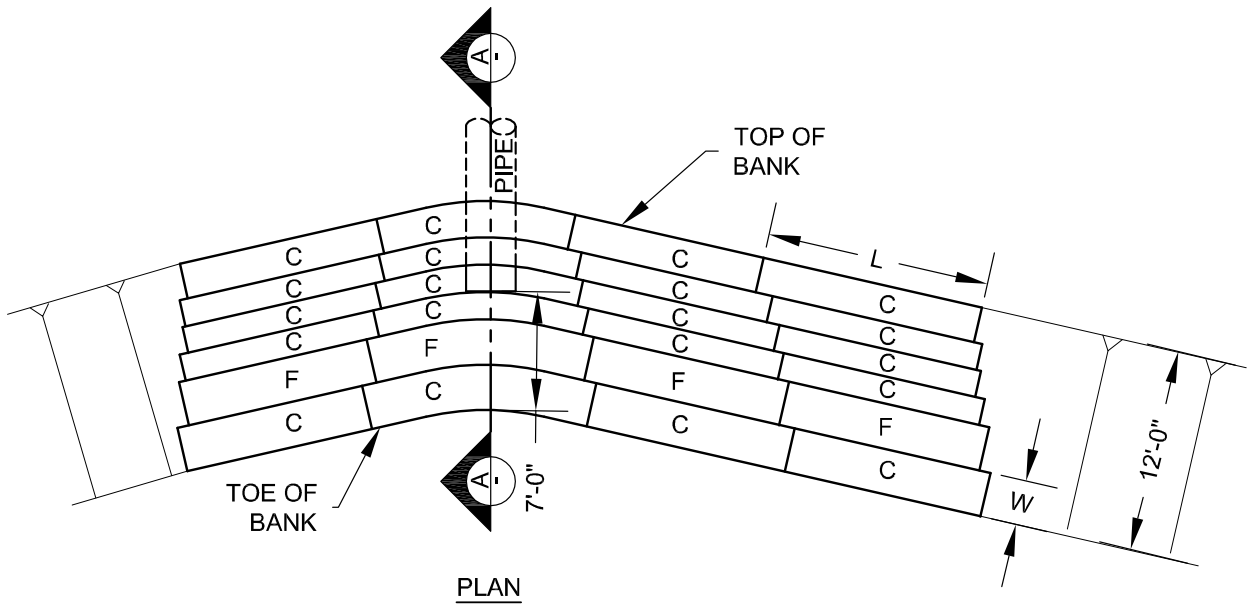
	CITY OF UNIVERSAL CITY <small>DEPARTMENT OF PUBLIC WORKS</small>		<small>ADOPTED 8/18/11</small> <small>REVISED 6/28/18</small> STANDARD NO. DET-405-03 2 OF 2
	STORM SEWER INLET COVER & FRAME		
	<small>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</small>		
	<small>RECORD COPY SIGNED BY RANDY LUHNSMANN, PUBLIC WORKS DIRECTOR.</small>		



NOTES:

1. PREPARE SITE FOR PLACEMENT OF BASKET BY EXCAVATING TO SMOOTH LINE GRADE AND CROSS SECTION, AS REQUIRED TO MEET DESIGN DIMENSIONS.
2. COMPACT ANY FILLS REQUIRED TO MEET GRADE REQUIREMENTS TO REDUCE DIFFERENTIAL SETTLEMENT.
3. ALL REMOVED EARTH THAT IS NOT USED TO BUILD FILLS FOR STRUCTURE SHALL BE DISPOSED OF AT AN APPROVED SPOIL SITE, IN SUCH A MANNER AS TO REDUCE THE LIKELIHOOD OF EROSION.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/30/11 REVISED 7/22/15
	GABIONS		STANDARD NO. DET-500-01 1 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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NOTE: DIMENSIONS ARE APPLICABLE FOR SINGLE OR MULTIPLE PIPES.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

GABION DETAILS

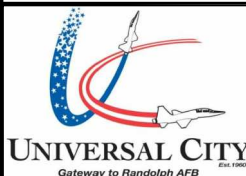
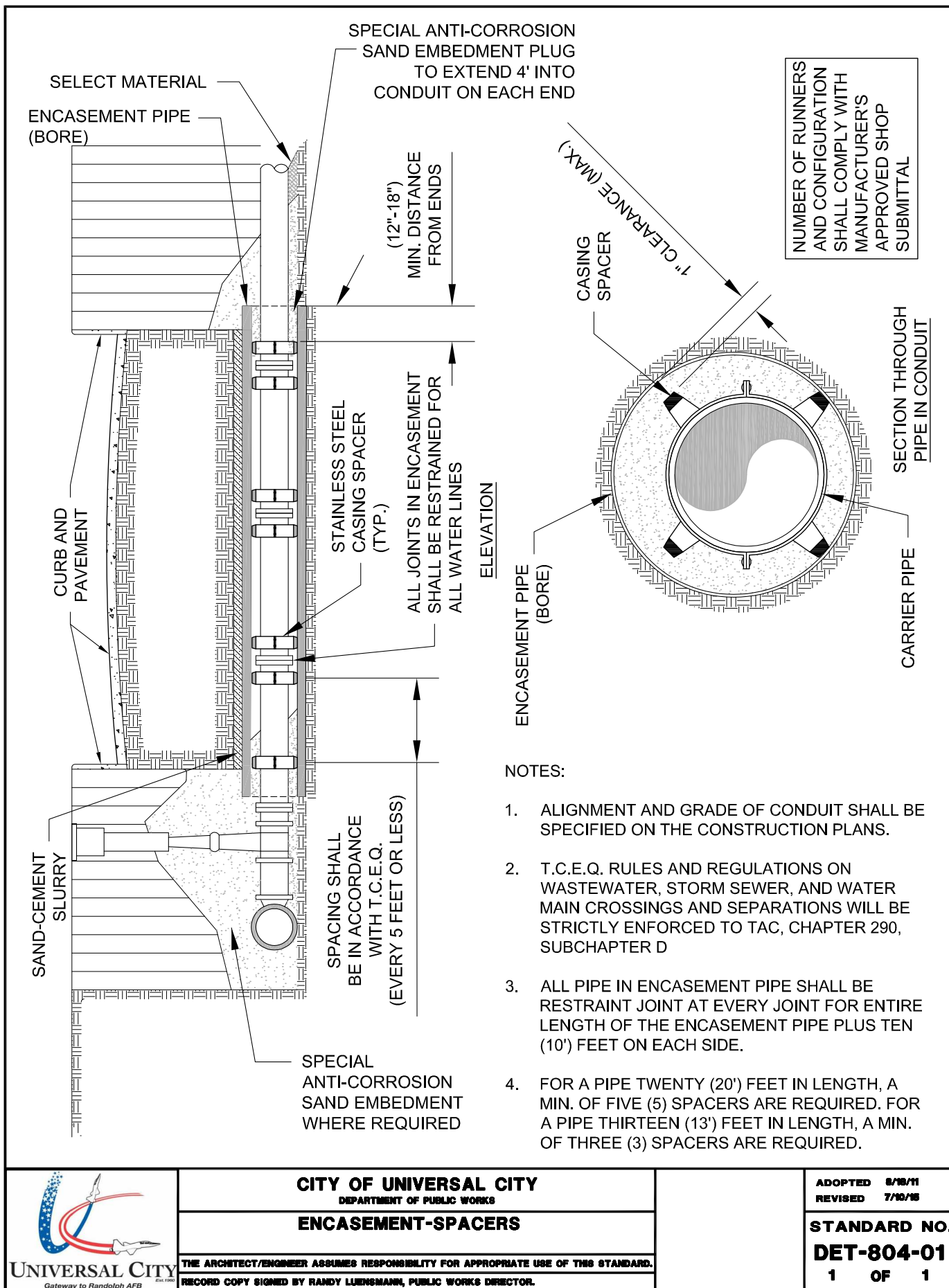
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/18/11
REVISED 7/22/15

STANDARD NO.
DET-500-01
2 OF 2

Water Details

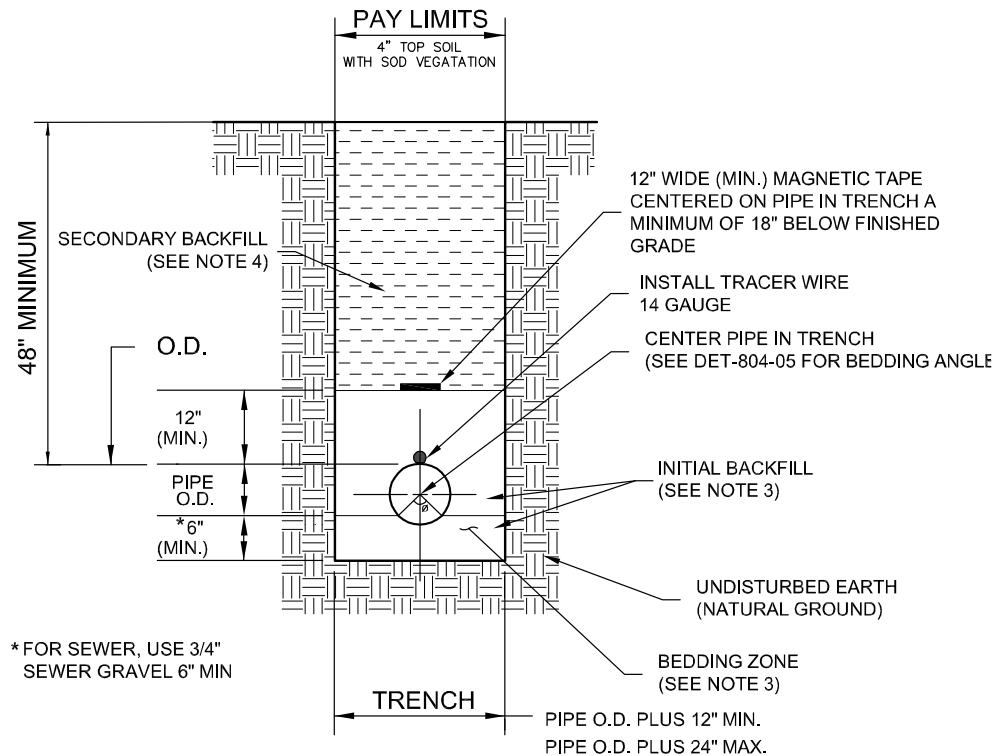
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CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
ENCASEMENT-SPACERS

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/18/11
REVISED 7/10/15
STANDARD NO.
DET-804-01
1 OF 1



ELEVATION

NOTES:

1. INITIAL AND SECONDARY BACKFILL SHALL BE COMPACTED TO 98% PER TXDOT STANDARD TEX-113-E.
2. INITIAL AND SECONDARY MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS UP TO 12 INCHES ABOVE THE UTILITY.
3. INITIAL BACKFILL FOR WATER SHALL BE PIT SILICA SAND. INITIAL BACKFILL FOR SEWER SHALL BE 3/4" SEWER GRAVEL PER CUC SPECIFICATIONS.
4. SECONDARY BACKFILL SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM TRENCH, IF SUITABLE, AS APPROVED BY THE CUC PUBLIC WORKS DEPARTMENT. MATERIAL MUST BE FREE OF BRUSH, DEBRIS, AND TRASH. NO ROCKS 3 INCHES OR LARGER.
5. WHEN WORK ONLY INVOLVES UTILITY IMPROVEMENTS OR REPAIR, AND IS NOT PART OF A ROADWAY RECONSTRUCTION OR PROPOSED ROADWAY PROJECT, FLOWABLE FILL IS REQUIRED AS SHOWN ON SHEET 3 OF DET-804-02.
6. SIDEWALKS SHALL BE REMOVED ACROSS ITS ENTIRE WIDTH.
7. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
8. ALL WATER LINES SHALL HAVE A MINIMUM PRESSURE CLASS OF 200 PSI.
9. RESTORE SURFACE TO ORIGINAL OR BETTER CONDITION.



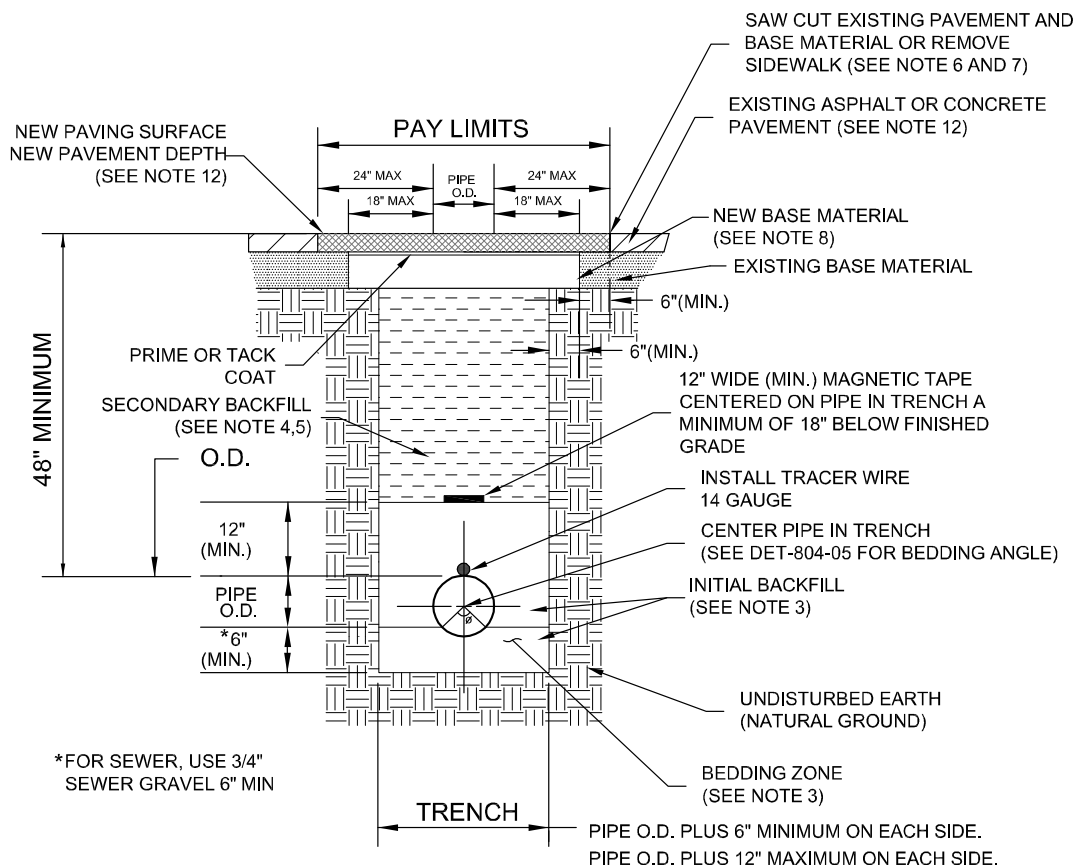
CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS

TRENCH REPAIR DETAIL FOR NON-PAVED AREAS WATER, RECYCLED WATER, AND SEWER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 08/18/11
REVISED 11/10/15

STANDARD NO.
DET-804-02
1 OF 2



ELEVATION

NOTES:

1. INITIAL BACKFILL SHALL BE COMPACTED TO 98% PER TXDOT STANDARD TEX-113-E.
2. INITIAL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS UP TO 12 INCHES ABOVE THE UTILITY.
3. INITIAL BACKFILL FOR WATER SHALL BE PIT SILICA SAND. INITIAL BACKFILL FOR SEWER SHALL BE 3/4" SEWER GRAVEL PER CUC SPECIFICATIONS.
4. WHEN WORK IS PART OF A ROADWAY RECONSTRUCTION OR PROPOSED ROADWAY PROJECT, SECONDARY BACKFILL SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM TRENCH, IF SUITABLE, AS APPROVED BY THE CUC PUBLIC WORKS DEPARTMENT. MATERIAL MUST BE FREE OF BRUSH, DEBRIS, AND TRASH. NO ROCKS 3 INCHES OR LARGER.
5. WHEN WORK ONLY INVOLVES UTILITY IMPROVEMENTS OR REPAIR, AND IS NOT PART OF A ROADWAY RECONSTRUCTION OR PROPOSED ROADWAY PROJECT, FLOWABLE FILL IS REQUIRED.
6. THE EXISTING PAVING SURFACE SHALL BE SAWCUT IN A STRAIGHT LINE, A MINIMUM OF 12 INCHES WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
7. ANY CONCRETE PAVING SHALL BE CUT 6 INCHES WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
8. SIDEWALKS SHALL BE REMOVED ACROSS ITS ENTIRE WIDTH.
9. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
10. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND, OF EQUAL THICKNESS.
11. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 8 INCHES OF BASE OR MATCH EXISTING, WHICHEVER IS GREATER.
12. ASPHALTIC OR CONCRETE PAVEMENT (MATCH EXISTING PAVEMENT TYPE) CONCRETE PAVEMENT TO MATCH EXISTING THICKNESS AND REINFORCING SURFACE PAVEMENT SHALL BE A MINIMUM OF 2-INCHES, WHICH EVER IS GREATER
13. ALL WATER LINES SHALL HAVE A MINIMUM PRESSURE CLASS OF 200 PSI.
14. RESTORE SURFACE TO ORIGINAL OR BETTER CONDITION.



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS

UTILITY TRENCH REPAIR DETAIL FOR ROADWAY AND ALLEY CROSSINGS

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

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ADOPTED 10/18/13
REVISED 11/10/15

STANDARD NO.
DET-804-02
2 OF 2

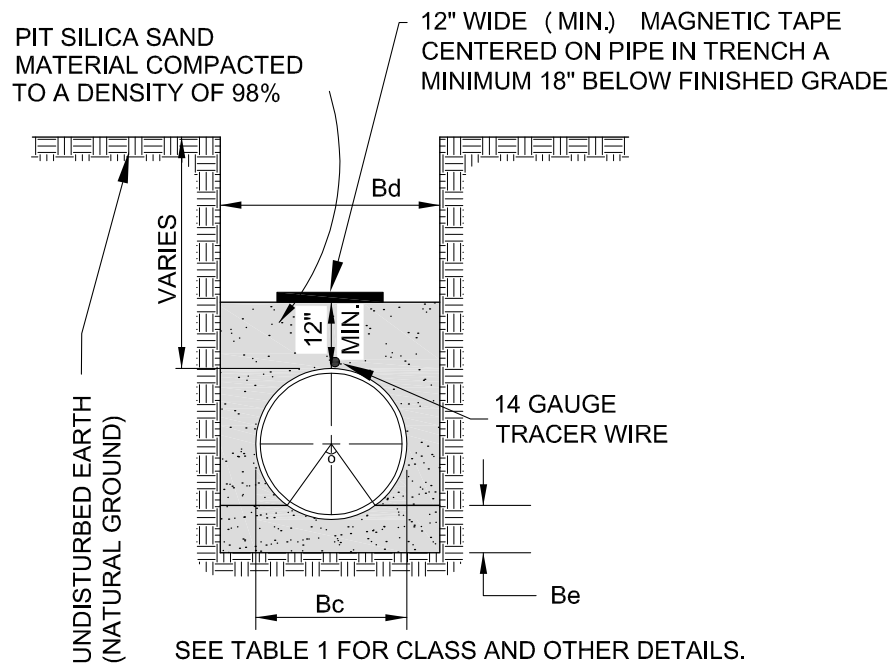


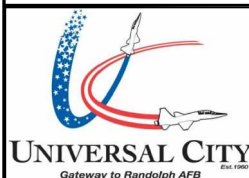
TABLE 1

CLASS	Be	BEDDING ANGLE	CLAS S	CLAS S
B	12"	150	1.90	700.00
C	12"	75	1.50	300.00
D	6"	30	1.30	200.00
F	6"	N/A	N/A	N/A

Bd=TRENCH WIDTH
Bc=PIPE OUTSIDE DIAMETER
Be=BEDDING MINIMUM BELOW THE PIPE

TABLE 2

EMBEDMENT FOR WATER AND WASTEWATER CONDUITS						
TYPE OF PIPE	IN EARTH			IN ROCK		
	0'-8'	8'-16'	>16'	0'-8'	8'-16'	>16'
18" AND SMALLER DUCTILE IRON WATER PIPE	D	C	C	D	C	B
18" AND LARGER DUCTILE IRON WATER PIPE	D	B	B	D	B	B
ALL PVC WATER PIPE	C	B	B	C	B	B
ALL PVC WASTEWATER PIPE	F	F	F	F	F	F
24" & 30" RCP	D	B	B	D	B	B



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

**WATER, RECYCLE WATER,
AND SEWER EMBEDMENT**

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 10/16/13
REVISED 7/10/16


STANDARD NO.
DET-804-05
1 OF 2

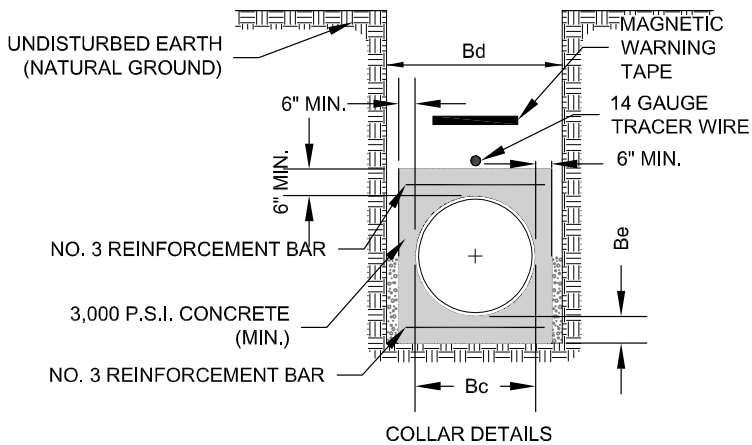
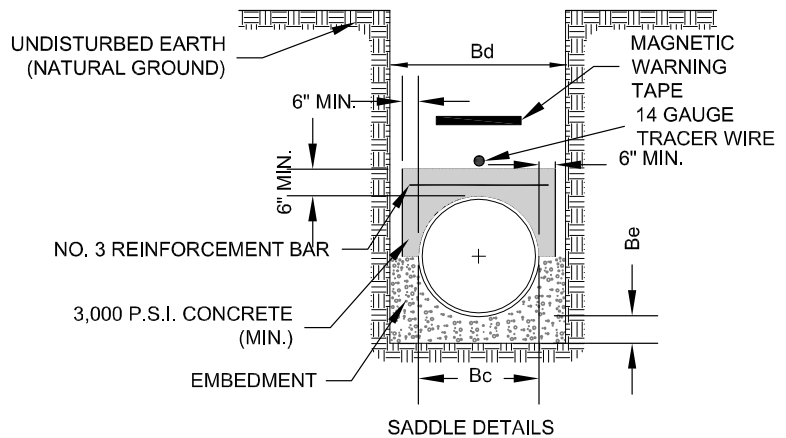
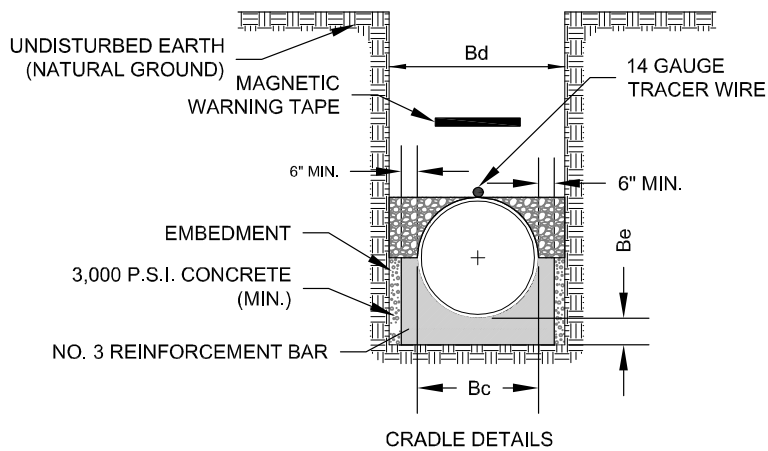
TABLE 3

WATER EMBEDMENT DIMENSIONS			
PIPE DIAMETER (INCHES)	TYPE OF PIPE	EXTERNAL DIAMETER Bc (INCHES)	TRENCH WIDTH Bd (INCHES)
6"	PVC WATER	6.90	24
6"	DI WATER	6.90	24
8"	PVC WATER	9.05	25
8"	DI WATER	9.05	25
12"	PVC WATER	13.20	29
12"	DI WATER	13.20	29
16"	PVC WATER	17.40	33
16"	DI WATER	17.40	33
18"	PVC WATER	19.50	36
18"	DI WATER	19.50	36
20"	PVC WATER	21.60	38
20"	DI WATER	21.60	38
24"	PVC WATER	25.80	42
24"	DI WATER	25.80	42
24"	RCCP WATER	30.00	46
30"	PVC WATER	32.00	48
30"	DI WATER	32.00	48
30"	RCCP WATER	32.00	61

NOTES:

1. PIPE EMBEDMENT SHALL CONFORM TO DETAILS SHOWN HEREIN.
2. SECONDARY BACKFILL SHALL EXTEND FROM ABOVE THE EMBEDMENT TO BELOW THE PAVEMENT REPAIR SECTION WITHIN PAVEMENT AREA AND TO BELOW THE TOP SOIL SECTION OUTSIDE PAVEMENT AREAS.
3. SECONDARY BACKFILL SHALL CONSIST OF SELECT MATERIAL, INCLUDING GRAVEL, FINE ROCK CUTTINGS, SAND, SANDY LOAM, OR LOAM FREE FROM EXCESSIVE CLAY. ROCK CUTTINGS SHALL HAVE NO DIMENSION GREATER THAN TWO (2) INCHES. TRENCH CUTTINGS MAY BE UTILIZED AS SELECT MATERIAL PROVIDED THE CONDITIONS OF THIS PARAGRAPH ARE MET.
4. SECONDARY BACKFILL SHALL BE COMPACTED TO 98% PER TXDOT STANDARD TEX-113-E WITHIN AND OUTSIDE PAVEMENT AREAS.
5. SELECT COMPACTED BACKFILL, NO ROCKS 3 INCHES OR LARGER. RESTORE SURFACE TO ORIGINAL OR BETTER CONDITION (INCLUDING RE-VEGETATION).
6. RCCP = REINFORCED CONCRETE CYLINDER PIPE.
7. EMBEDMENT DIMENSIONS FOR HDPE PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	ADOPTED 10/16/18 REVISED 7/10/18 STANDARD NO. DET-804-05 2 OF 2
	WATER, RECYCLE WATER, AND SEWER EMBEDMENT	
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.	



LEGEND
 Bd=TRENCH WIDTH
 Bc=PIPE OUTSIDE DIAMETER
 Be=BEDDING MINIMUM BELOW THE PIPE

NOTES:

1. ENCASEMENT MAY BE PLACED TO FULL TRENCH WIDTH, WITH NO ADDITIONAL COST TO THE OWNER.
2. USE COLLAR DETAIL FOR ALL FULL LENGTH CONCRETE ENCASEMENT AS SHOWN ON THE PLANS.
3. ALL CONCRETE ENCASEMENTS IN DRAINAGE CROSSINGS SHALL EXCEED TEN (10) FEET PAST THE EMBANKMENTS OR FLOOD WAY.
4. SELECT COMPACTED BACKFILL, NO ROCKS 3 INCHES OR LARGER. RESTORE SURFACE TO ORIGINAL OR BETTER CONDITION (INCLUDING RE-VEGETATION). SEE DET-804-02 FOR ADDITIONAL BACKFILL INFORMATION.
5. 12" WIDE (MIN.) MAGNETIC TAPE CENTERED ON PIPE IN TRENCH A MINIMUM OF 18" BELOW FINISHED GRADE.
6. FOR ADDITIONAL EMBEDMENT INFORMATION REFER TO DET-804-05.

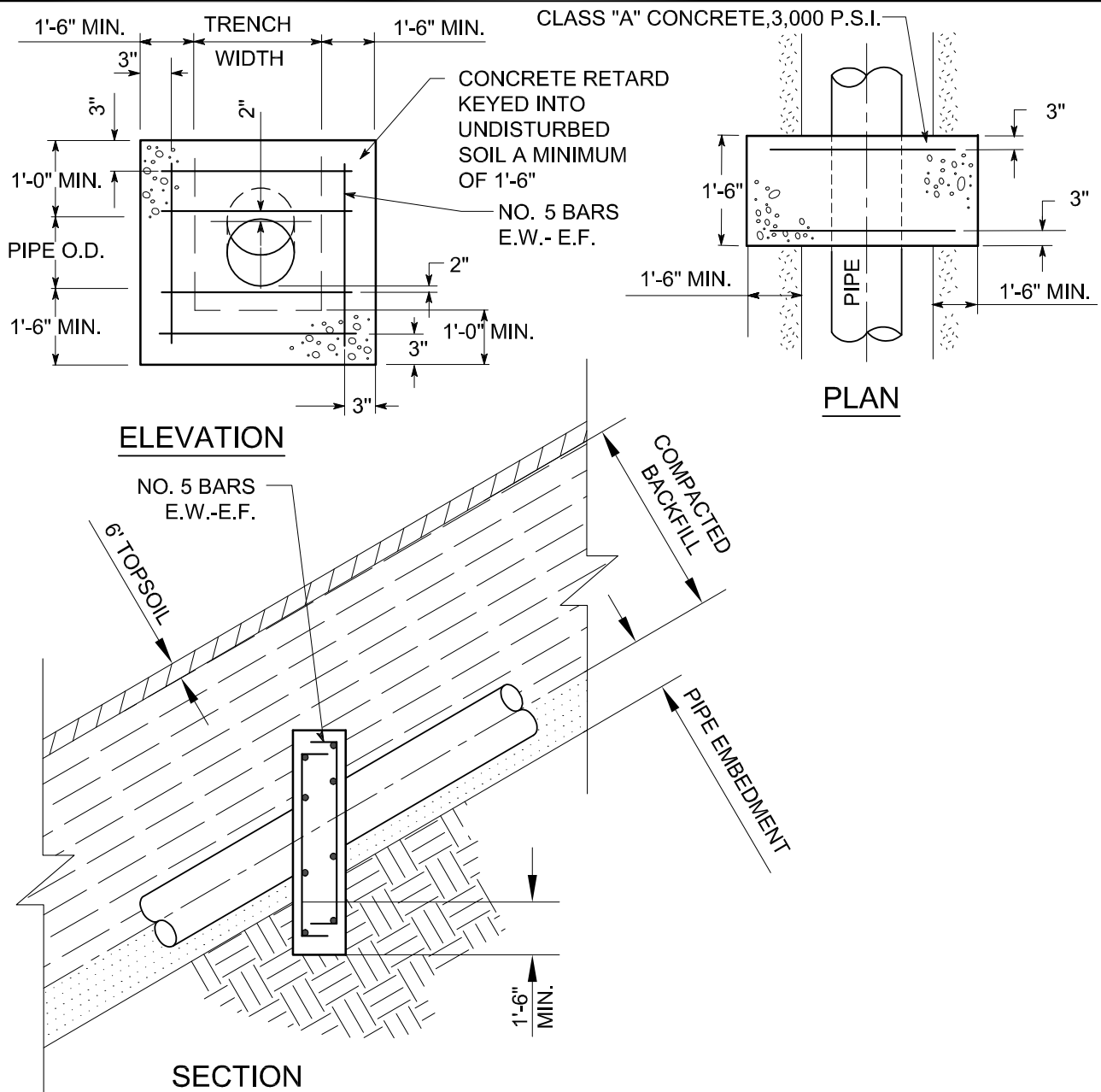


CITY OF UNIVERSAL CITY
 DEPARTMENT OF PUBLIC WORKS
CONCRETE ENCASEMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 11/14/13
 REVISED 7/10/16

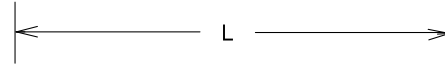
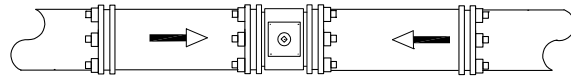
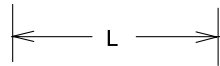
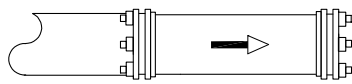
STANDARD NO.
DET-804-06
 1 OF 1



NOTES:

1. CONCRETE RETARDS SHALL BE INSTALLED ON PIPELINES, WHOSE GRADE IS 10% OR GREATER. CONCRETE RETARDS SHALL BE CENTERED ON EACH JOINT OF PIPE.
2. IN LIEU OF "CONCRETE RETARDS" AS SHOWN ON THIS DETAIL, THE CONTRACTOR MAY FULLY "CONCRETE ENCASE" (MINIMUM OF 12-INCHES CONCRETE THICKNESS FROM PIPE O.D.) ONE (1) PIPE SEGMENT AND ONE PIPE JOINT.
3. IN LIEU OF "CONCRETE RETARDS" OR "CONCRETE ENCASEMENT", THE CONTRACTOR MAY INSTALL RESTRAINED-JOINT PIPE SYSTEM ALONG ROUTES MEETING SLOPE AND DISTANCE REQUIREMENTS AS STATED IN THIS DETAIL.

 <p>UNIVERSAL CITY Gateway to Randolph AFB</p>	<p>CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS</p>		<p>ADOPTED 12/2/13 REVISED 7/10/16</p>
	<p>CONCRETE RETARD</p>		<p>STANDARD NO. DET-804-07</p>
	<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</p>		<p>1 OF 1</p>
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L=LENGTH TO BE RESTRAINED

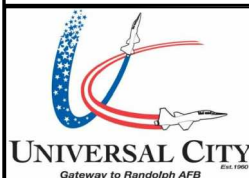
PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

RESTRAINED LENGTH CALCULATIONS ARE FOR P.V.C. PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. THE NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.

NOTE:

THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION.



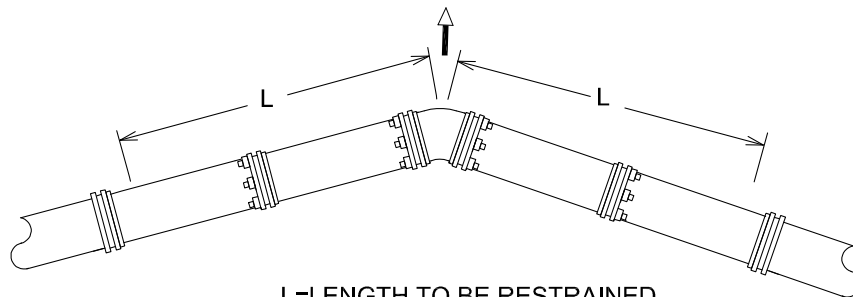
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RESTRAINED LENGTHS FOR DEAD ENDS & INLINE VALVES

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 10/14/11
REVISED 7/22/15

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L=LENGTH TO BE RESTRAINED
ON BOTH SIDES OF FITTING

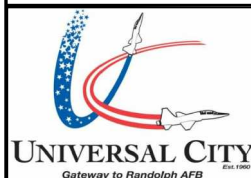
PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

RESTRAINED LENGTH DESIGN

RESTRAINED LENGTH CALCULATIONS ARE FOR P.V.C. PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. THE NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.

NOTE:

THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION.



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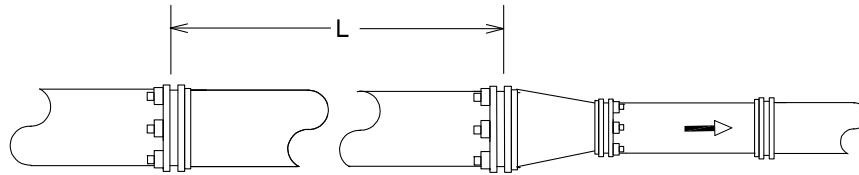
RESTRAINED LENGTHS FOR HORIZONTAL BENDS

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

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ADOPTED 10/14/11
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STANDARD NO.
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L=Length to be restrained


PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	95	71
12	6	80	60
12	8	58	43

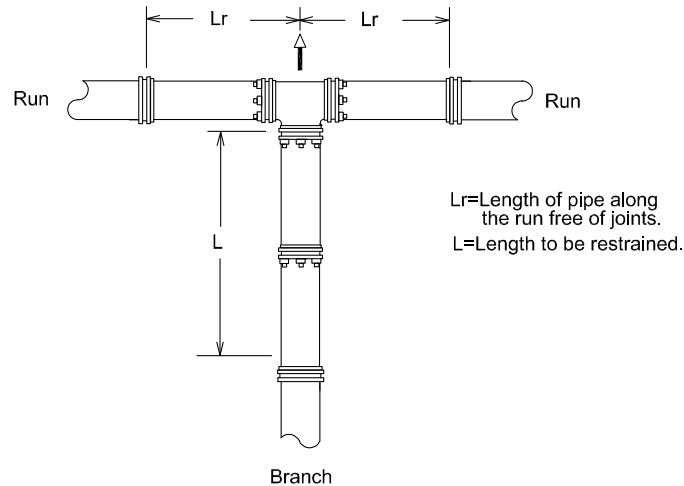
RESTRAINED LENGTH DESIGN

RESTRAINED LENGTH CALCULATIONS ARE FOR P.V.C. PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. THE NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.

NOTE:

THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 10/14/11 REVISED 7/22/15
	RESTRAINED LENGTHS FOR REDUCERS		
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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			STANDARD NO. DET-812-01 3 OF 5



RESTRAINED LENGTH FOR TEES

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	1	1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	1	1
8	6	0	59	44
8	6	5	28	13
8	6	10	1	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	6	1
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

RESTRAINED LENGTH DESIGN

RESTRAINED LENGTH CALCULATIONS ARE FOR P.V.C. PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. THE NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.

NOTE:

THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION.



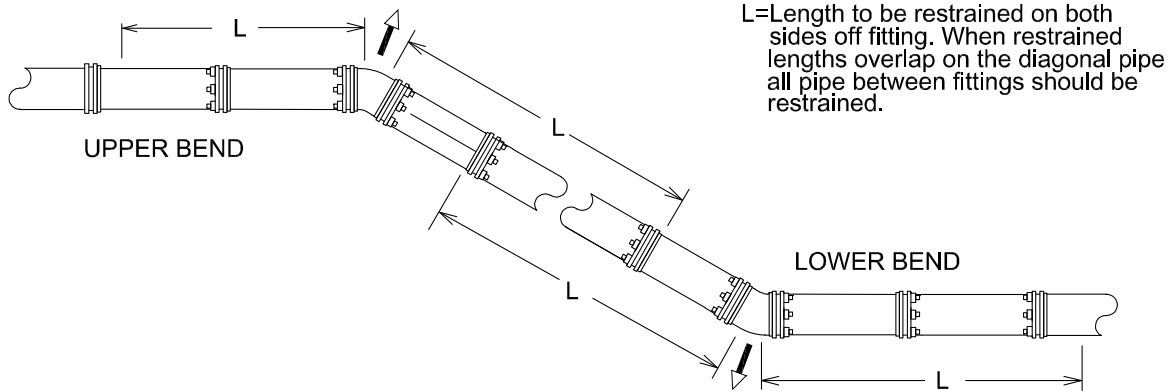
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RESTRAINED LENGTHS FOR TEES

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 10/14/11
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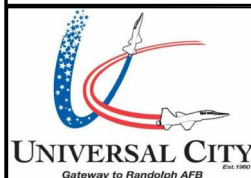
PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	8	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	15	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	16	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN

RESTRAINED LENGTH CALCULATIONS ARE FOR P.V.C. PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. THE NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.

NOTE:

THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION.



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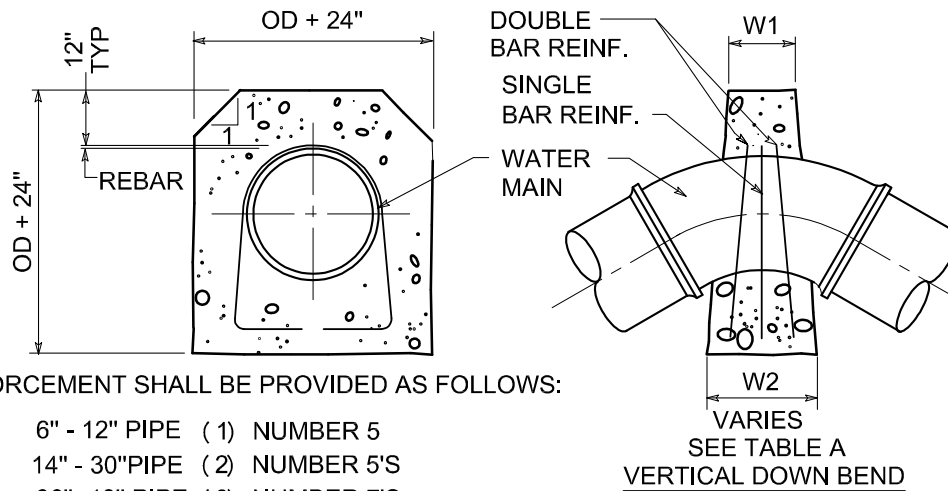
RESTRAINED LENGTHS FOR VERTICAL OFFSETS

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

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ADOPTED 10/14/11
REVISED 7/22/15

STANDARD NO.
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REINFORCEMENT SHALL BE PROVIDED AS FOLLOWS:

- 6" - 12" PIPE (1) NUMBER 5
- 14" - 30" PIPE (2) NUMBER 5'S
- 36" - 48" PIPE (3) NUMBER 7'S


TABLE A UPWARD THRUST GRAVITY BLOCKS			
PIPE DIA.	MIN. TOP WIDTH W1	ANGLE (degrees)	BOTTOM WIDTH-W2 (in)
6"	6"	0-5	NOTE 2
		5-15	24
		15-25	48
		≥ 25	NOTE 1
8"	6"	0-5	NOTE 2
		5-9	30
		9-15	36
		≥ 15	NOTE 1
12"	6"	0-5	NOTE 2
		5-15	48
		≥ 15	NOTE 1
16"	12"	0-5	NOTE 2
		5-10	60
		10-15	96
		≥ 15	NOTE 1
24" THRU 36"		≥ 5.0	NOTE 1
42" THRU 48"		≥ 3.0	NOTE 1

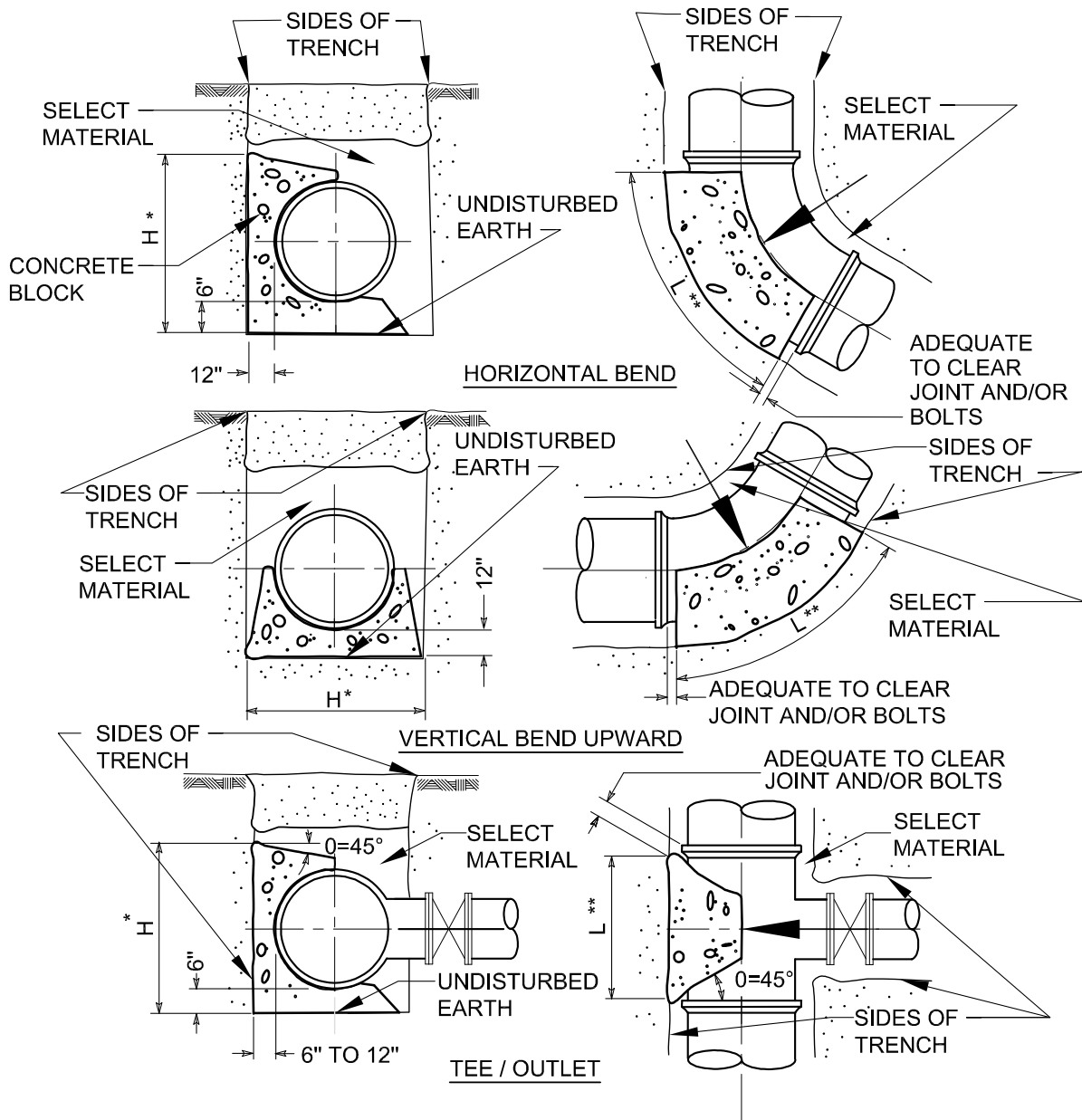
THRUST BLOCK DESIGN AS FOLLOWS
 A. PRESSURE OF 150 P.S.I.
 (ACTUAL IF HIGHER)
 + 50 % SURGE ALLOWANCE
 B. MAXIMUM SOIL BEARING
 SEE TABLE BELOW

SOIL TYPES	PRESSURE
LOOSE OR SPONGY SOIL	1500 Lb/Sq.Ft.
UNDISTURBED SOIL, CALICHE	2000 Lb/Sq.Ft.
LIMESTONE ROCK	4000 Lb/Sq.Ft.

NOTES:

1. THE EARTH BEARING SURFACE SHALL BE UNDISTURBED MATERIAL, IF NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND THE UNDISTURBED SOIL, MUST BE COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR DENSITY.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ADEQUATE THRUST BLOCKING. THE CONTRACTOR SHALL MAKE THE DETERMINATION IN THE FIELD AS TO THE TOP OF SOIL AND USE THE "THRUST BLOCKING DESIGN" TO ADJUST THE AMOUNTS OF THRUST BLOCKING REQUIRED AT EACH PLACE OF USE.
3. ALL FITTINGS SHALL BE BLOCKED REGARDLESS OF THE ANGLE OF DIRECTION. FOR ANGLES GREATER THAN THOSE INDICATED, RESTRAINED JOINTS SHALL BE INSTALLED. FOR JOINT DEFLECTIONS LESS THAN FIVE (5°) DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN FORTY TWO (42") INCHES IN DIAMETER.
4. PLACE 4 MIL. POLYETHYLENE BETWEEN THE CONCRETE AND THE FITTING. CONSTRUCT BLOCK SUCH THAT THE CONCRETE DOES NOT INTERFERE WITH THE ADJACENT PIPE JOINT.
5. THE HORIZONTAL DIMENSION OF THE BEARING AREA SHALL BE BETWEEN 1 AND 2 TIMES THE VERTICAL DIMENSION.


	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/10/18
	THRUST BLOCKING		STANDARD NO. DET-812-02
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		1 OF 2
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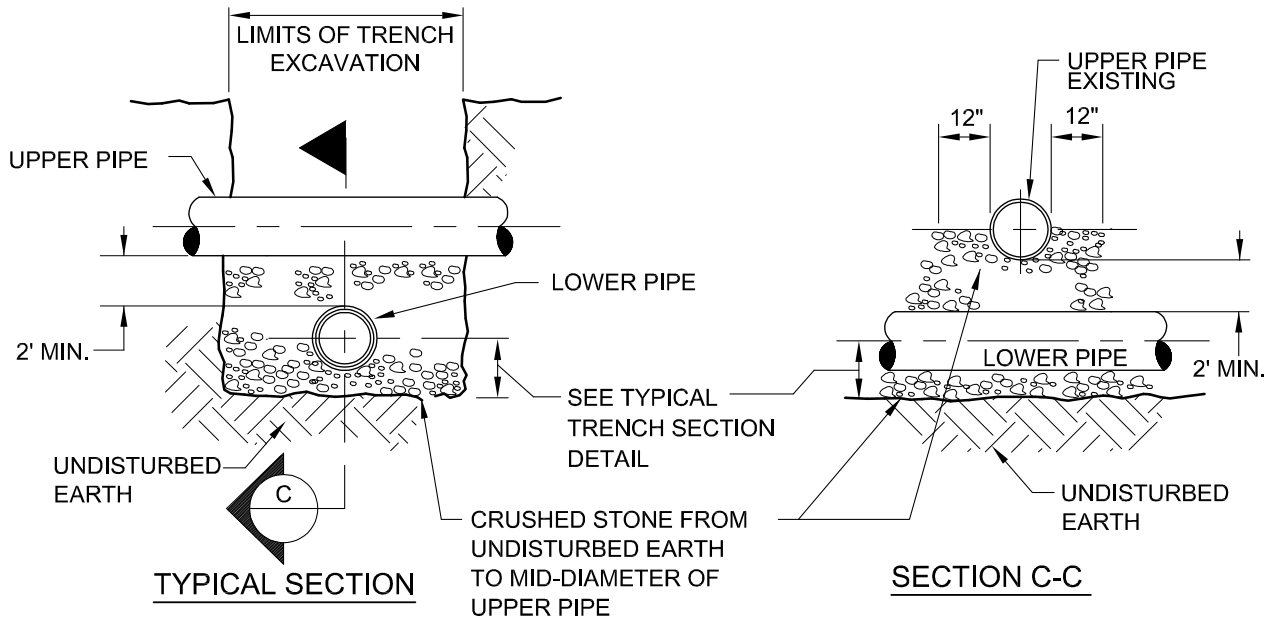


- * THE DIMENSION FOR "H" OF THE BLOCK SHALL BE EQUAL TO OR LESS THAN 1/2 THE TOTAL DEPTH FROM FINISHED GRADE TO THE BOTTOM OF THE BLOCK, BUT NOT LESS THAN THE DIAMETER OF THE PIPE.
- ** LENGTH "L" ALONG THE BEND MUST BE GREATER THAN "H" AND LESS THAN 2 TIMES "H".

NOTES CONTINUED:


6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. AT 28 DAYS.
7. THRUST BLOCKING ORIENTATION SHALL BE SUCH THAT THE CENTER OF THE FITTING CORRESPONDS WITH THE CENTER OF THE THRUST BLOCK.
8. PIPES 18" AND LARGER SHALL HAVE RESTRAINED JOINTS.
9. POUR THE BASE FOR THE FIRE HYDRANT AFTER IT HAS BEEN PLACED, AND DO NOT BLOCK THE DRAIN HOLES.
10. CONCRETE BLOCKING REQUIRED FOR ALL 12" GATE VALVES AND LARGER. ALL BUTTERFLY VALVES 16" OR LARGER.

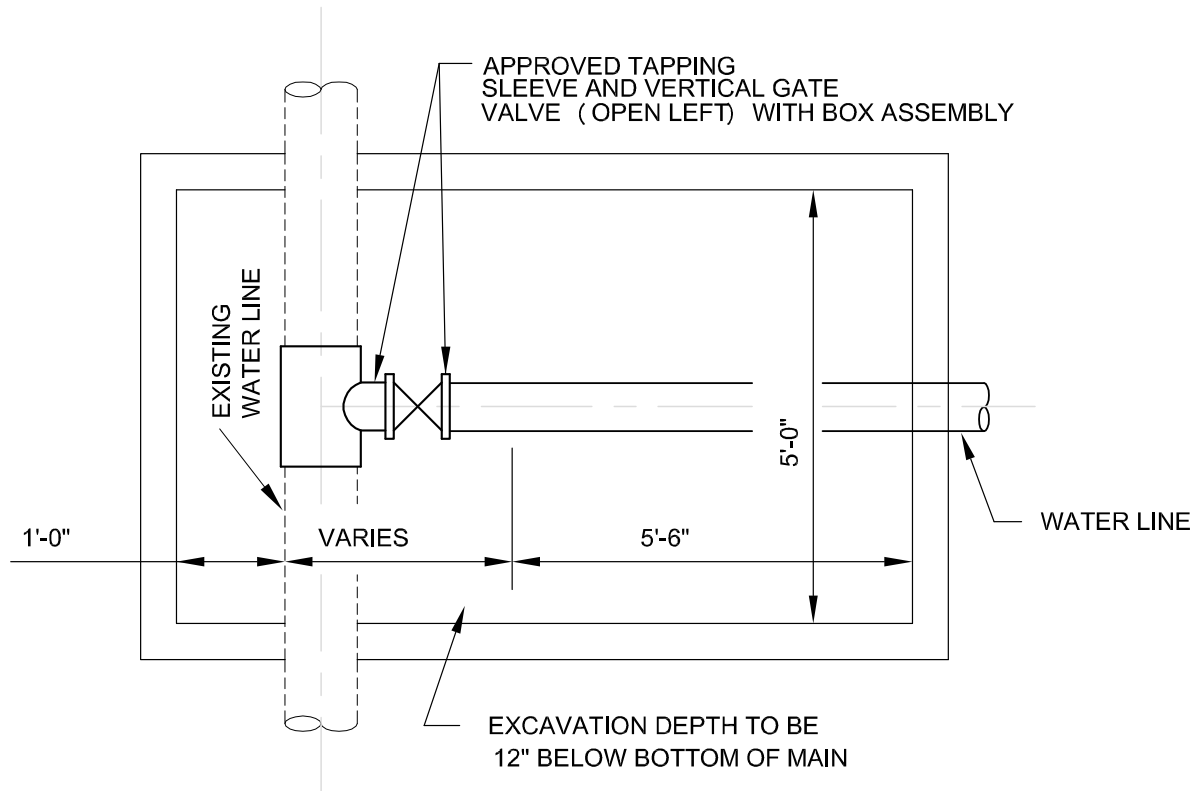
 UNIVERSAL CITY <i>Entertainment to the World's Edge</i> <small>EST. 1970</small> <small>AEQ</small>	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/10/15
	THRUST BLOCKING		STANDARD NO. DET-812-02 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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NOTES:

1. T.C.E.Q. RULES AND REGULATIONS ON WATER MAINS, WASTEWATER LINES AND STORM SEWER CROSSINGS AND SEPARATIONS SHALL BE STRICTLY ENFORCED, 30 TAC, CHAPTER 290, SUBCHAPTER D.
2. ALL OTHER UTILITIES TO MAINTAIN TWO (2) FOOT SEPARATION VERTICAL AND HORIZONTAL FROM WATER MAINS AND SERVICES, GAS, ELECTRIC, CABLE, ETC. TO BE LOCATED OPPOSITE SIDES OF THE PROPERTY.
3. IF REQUIRED UTILITY CROSSINGS SEPARATED BY LESS THAN 12", PIPES SHALL BE ENCASED WITH SIX (6) INCHES OF CONCRETE ALL AROUND AND CENTERED TO THE CROSSING FOR A MINIMUM LENGTH OF TWENTY (20) FEET TOTAL.
4. AT ANY CREEK CROSSING, THE MAIN, SHALL BE STEEL ENCASED AND/OR 6" CONCRETE ENCASEMENT TO TEN (10) FEET OUTSIDE OF CREEK OR DRAINAGE DITCH AREA.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/10/18
	UTILITY CROSSING		STANDARD NO. DET-812-03 1 OF 1
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



NOTE:

1. NO SIZE ON SIZE ALLOWED, MAKE WET CONNECTION.
2. NO TAPPING ALLOWED CLOSER THAN 3 TIMES THE PIPE DIAMETER TO AN EXISTING COLLAR JOINT OR TAP.
3. REQUIRED AIR TEST ON INSTALLED SADDLE AND VALVE BEFORE TAPPING. TEST REQUIRED IS 125 PSI FOR 5 MINUTES.



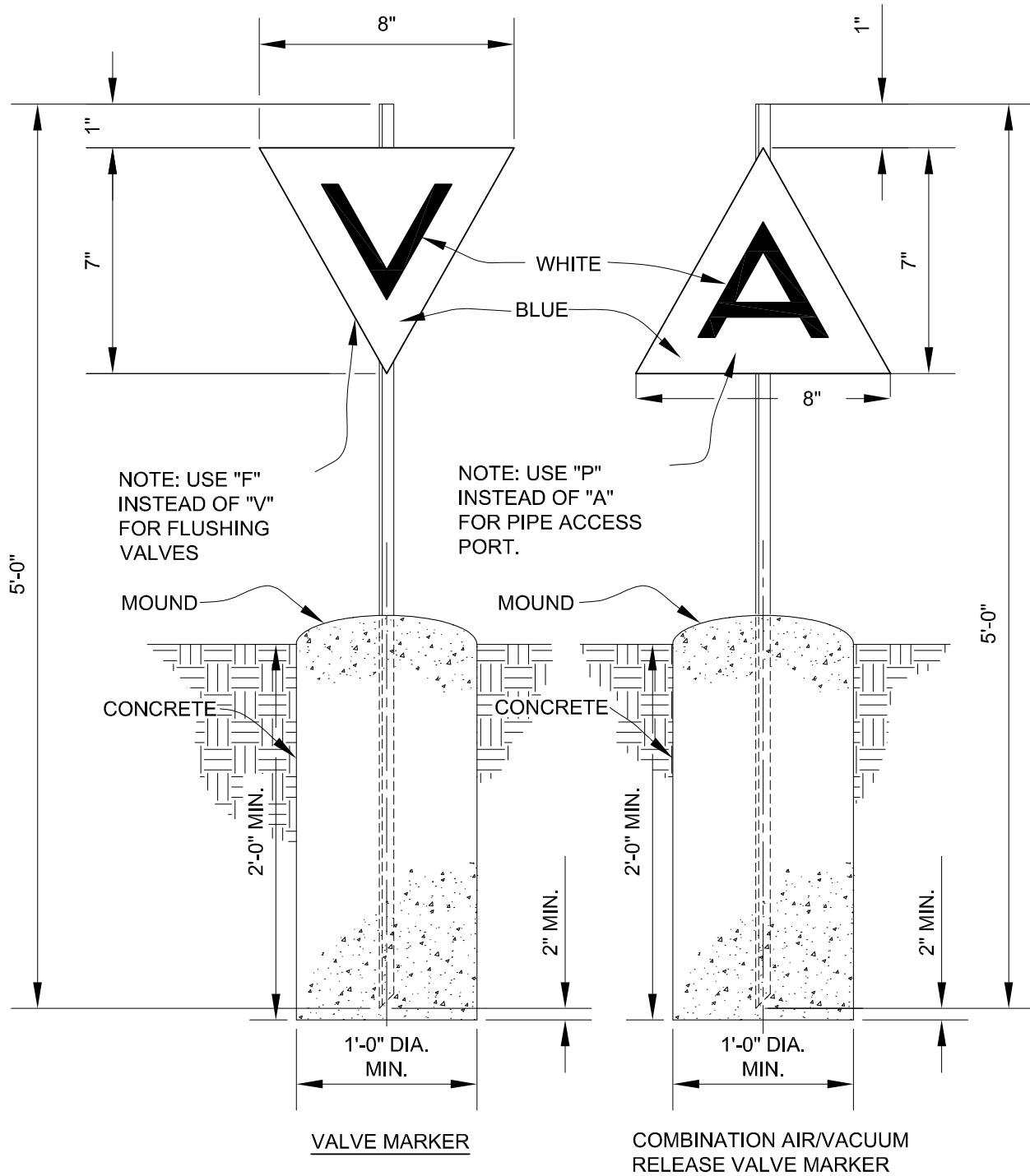
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

MINIMUM EXCAVATION PRESSURE TAP

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/18/11
REVISED 7/10/15

STANDARD NO.
DET-812-04
1 OF 1



NOTES:

1. PLACE VALVE, AIR RELEASE VALVES AND ACCESS PORT MARKERS AT THE LOCATIONS OF EACH ITEM.
2. CONCRETE SHALL BE CLASS "A", 3,000 P.S.I.

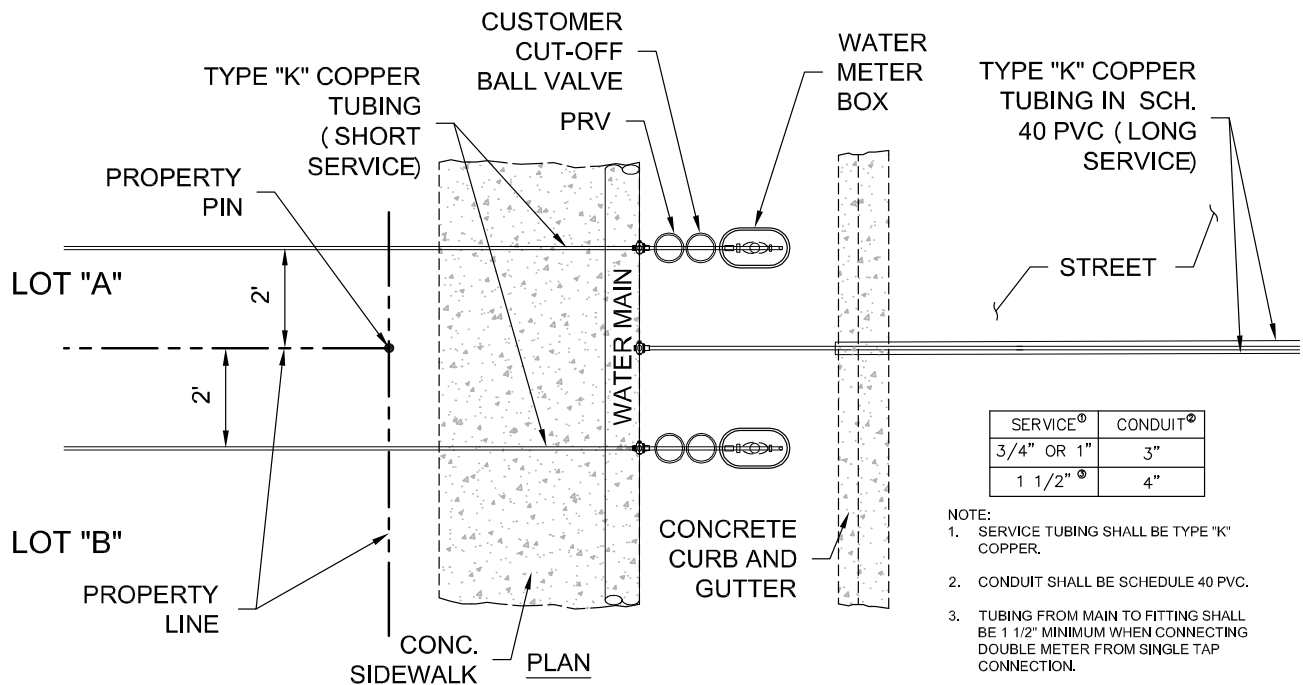


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
WATER LINE MARKERS

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 8/18/11
REVISED 7/10/16

STANDARD NO.
DET-812-05
1 OF 1



NOTES:

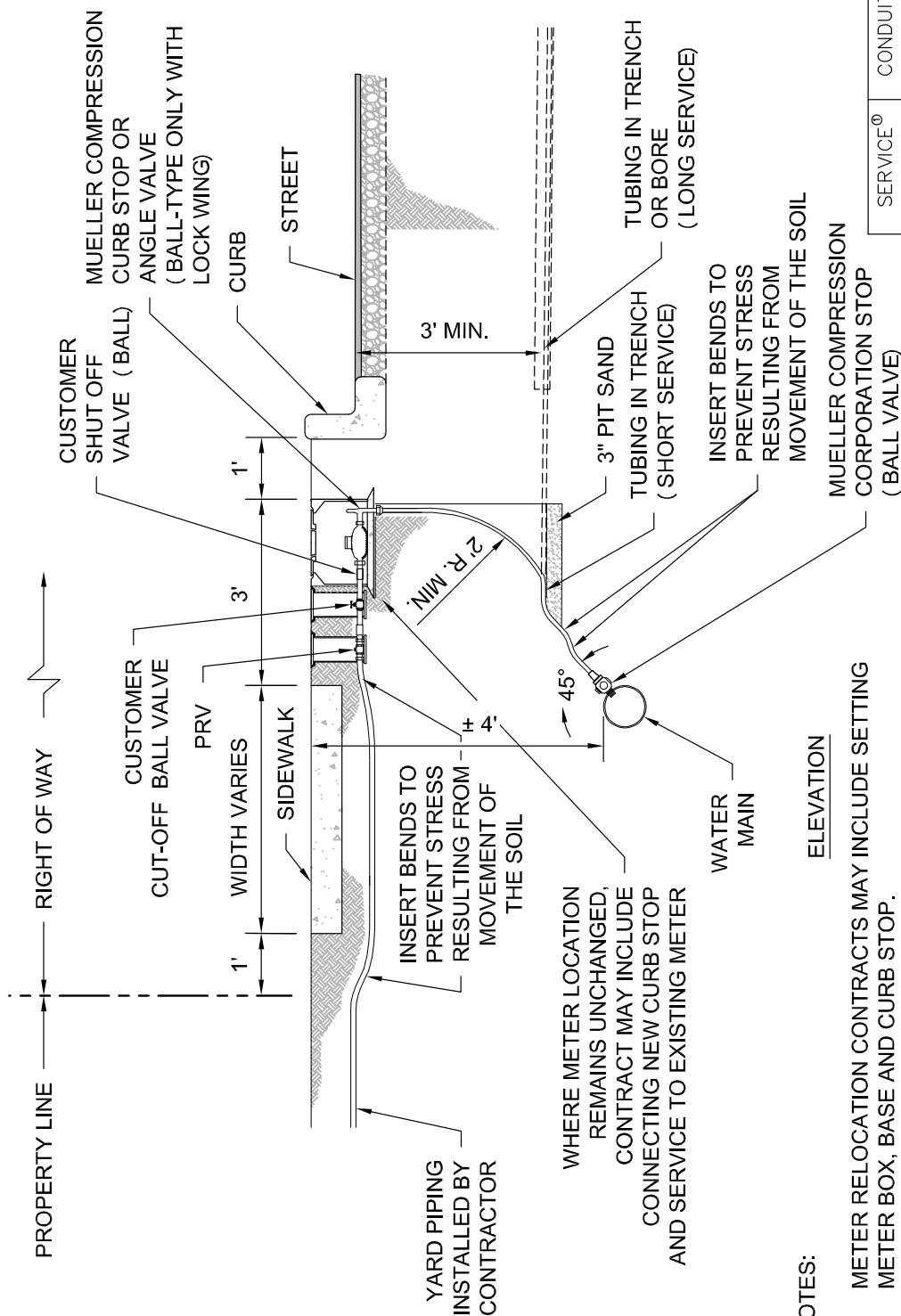
1. INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY DEPARTMENT OF PUBLIC WORKS PERSONNEL.
2. DEVELOPER ALSO INSTALLS WATER LINES INCLUDING FITTINGS AND VALVES ON BOTH SIDES OF THE METER, INSTALL METER BOXES AND COVERS. ALL IN ACCORDANCE WITH INFORMATION ON APPLICABLE STANDARD DRAWING. A VENTED SPACER MAY BE USED TO ASSURE PROPER SPACING AND ALIGNMENT OF METER FITTINGS.
3. DEVELOPER IS RESPONSIBLE FOR METER BOX AND PIPING SYSTEM UNTIL THE METER IS INSTALLED AND WATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY THE DEVELOPER, WHO SHALL GUARANTEE, FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO THE DEPARTMENT OF PUBLIC WORKS SYSTEMS, ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIALS. DEVELOPER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL VALVES, STOPS, AND METER BOXES REMAIN CLEAR OF SIDEWALKS, CURBS AND DRIVEWAYS.
4. THE DEPARTMENT OF PUBLIC WORKS ACTIVITY IS LIMITED TO INSTALLATION OF THE WATER METER AND INSPECTION OF CONNECTIONS TO THE CITY WATER SYSTEMS. FOR MAINTENANCE PURPOSES, THE DEPARTMENT OF PUBLIC WORKS RESPONSIBILITY ENDS AT THE WATER METER.
5. NO METER BOX SHALL BE SET IN A SIDEWALK , DRIVEWAY, OR CURB AREA WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
6. PIPING AND TUBING IN THE STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN A PIT SAND MATERIAL AND ENCASED IN A SCHEDULE 40 PVC CONDUIT SLEEVE, AS REQUIRED IN THE SPECIFICATIONS. SERVICE LINES SHALL HAVE A MINIMUM COVER BELOW FINAL GRADE OF THIRTY-SIX (36") INCHES.
7. PRV WILL MEET ANSI/ASSE 1003-2009 WATER PRESSURE REDUCING VALVE REQUIREMENTS. REDUCED PRESSURE RANGES SHALL BE 15 PSI TO 150 PSI OR AS APPROVED FROM THE DEPARTMENT OF PUBLIC WORKS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 12/4/15
	SINGLE METER WATER SERVICE CONNECTION		STANDARD NO. DET-824-01
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		1 OF 2

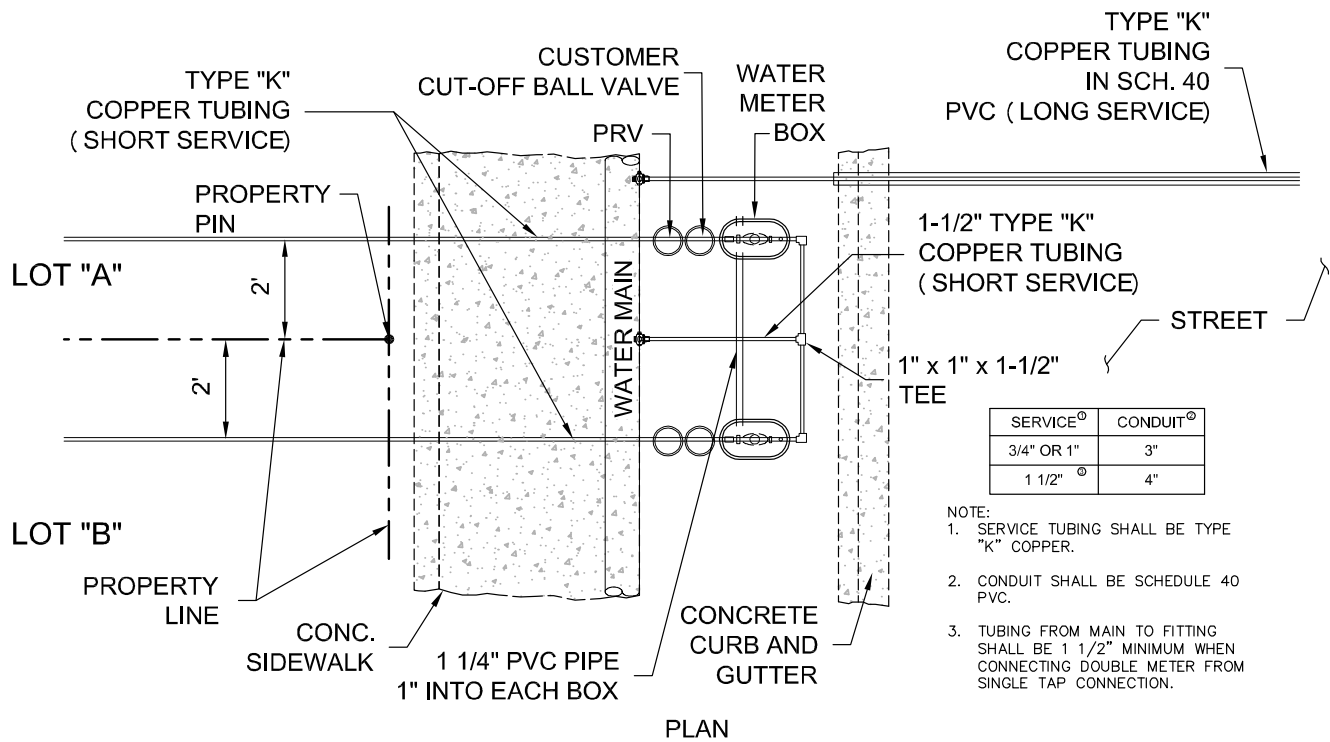


CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
SINGLE METER WATER SERVICE CONNECTION	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED	8/18/11
REVISED	12/4/15
STANDARD NO. DET-824-01	
2	OF 2




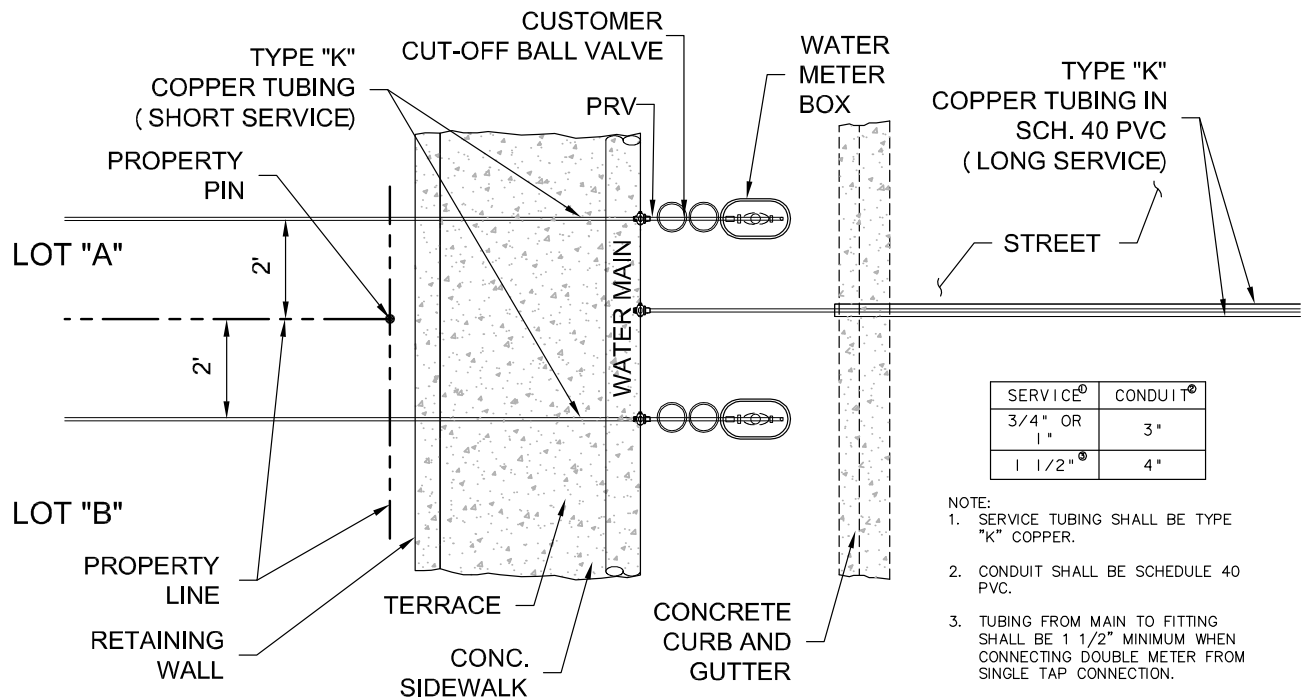
- NOTE:
- SERVICE TUBING SHALL BE TYPE "K" COPPER.
 - CONDUIT SHALL BE SCHEDULE 40 PVC.
 - TUBING FROM MAIN TO FITTING SHALL BE 1 1/2" MINIMUM WHEN CONNECTING DOUBLE METER FROM SINGLE TAP CONNECTION.



NOTES:

1. INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY DEPARTMENT OF PUBLIC WORKS PERSONNEL.
2. DEVELOPER ALSO INSTALLS WATER LINES INCLUDING FITTINGS AND VALVES ON BOTH SIDES OF THE METER, INSTALL METER BOXES AND COVERS. ALL IN ACCORDANCE WITH INFORMATION ON APPLICABLE STANDARD DRAWING. A VENTED SPACER MAY BE USED TO ASSURE PROPER SPACING AND ALIGNMENT OF METER FITTINGS.
3. DEVELOPER IS RESPONSIBLE FOR METER BOX AND PIPING SYSTEM UNTIL THE METER IS INSTALLED AND WATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY THE DEVELOPER, WHO SHALL GUARANTEE, FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO THE DEPARTMENT OF PUBLIC WORKS SYSTEMS, ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIALS. DEVELOPER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL VALVES, STOPS, AND METER BOXES REMAIN CLEAR OF SIDEWALKS, DRIVEWAYS, CURBS AND OTHER OBSTRUCTIONS.
4. THE DEPARTMENT OF PUBLIC WORKS ACTIVITY IS LIMITED TO INSTALLATION OF THE WATER METER AND INSPECTION OF CONNECTIONS TO THE CITY WATER SYSTEMS. FOR MAINTENANCE PURPOSES, THE DEPARTMENT OF PUBLIC WORKS RESPONSIBILITY ENDS AT THE WATER METER.
5. NO METER BOX SHALL BE SET IN A SIDEWALK OR DRIVEWAY OR CURB AREA WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
6. CONTRACTOR TO INSTALL 1 1/4" PVC PIPE CONNECTION BETWEEN METER BOXES FOR DUAL SERVICES. DRILL HOLE INSIDE OF EACH BOX (2" FROM TOP AND 1" FROM FRONT) AND INSTALL PIPE TO PROTRUDE 1" INTO EACH BOX.
7. PIPING AND TUBING IN THE STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN A PIT SAND MATERIAL AND ENCASED IN A SCHEDULE 40 PVC CONDUIT SLEEVE, AS REQUIRED IN THE SPECIFICATIONS. SERVICE LINES SHALL HAVE A MINIMUM COVER BELOW FINAL GRADE OF THIRTY-SIX (36") INCHES.
8. PRV WILL MEET ANSI/ASSE 1003-2009 WATER PRESSURE REDUCING VALVE REQUIREMENTS. REDUCED PRESSURE RANGES SHALL BE 15 PSI TO 150 PSI OR AS APPROVED FROM THE DEPARTMENT OF PUBLIC WORKS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 12/10/16
	DOUBLE METER SINGLE TAP WATER SERVICE CONNECTION		STANDARD NO. DET-824-02
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		1 OF 1
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



PLAN

NOTES:

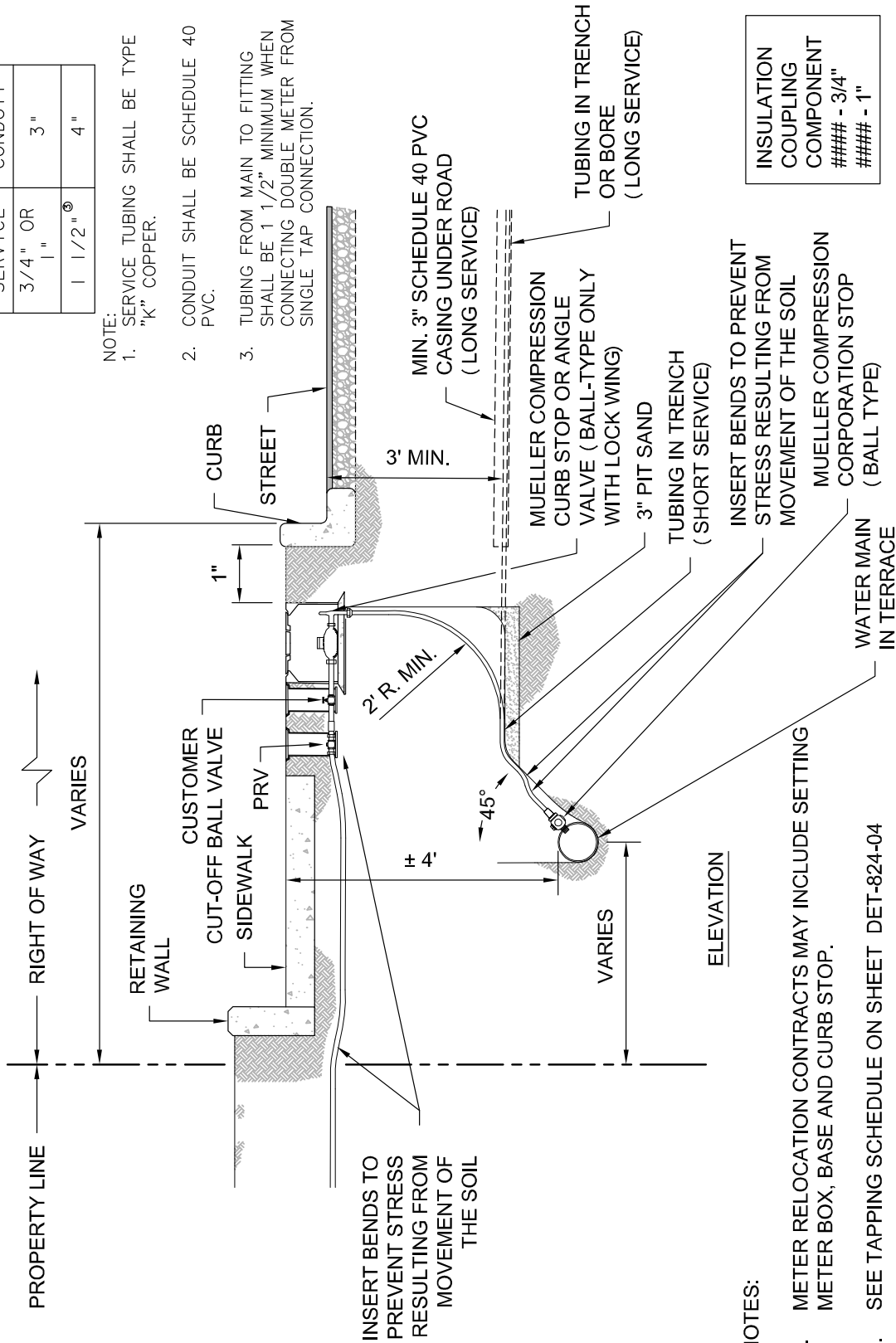
1. INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY DEPARTMENT OF PUBLIC WORKS PERSONNEL.
2. DEVELOPER ALSO INSTALLS WATER LINES INCLUDING FITTINGS AND VALVES ON BOTH SIDES OF THE METER, INSTALL METER BOXES AND COVERS. ALL IN ACCORDANCE WITH INFORMATION ON APPLICABLE STANDARD DRAWING. A VENTED SPACER MAY BE USED TO ASSURE PROPER SPACING AND ALIGNMENT OF METER FITTINGS.
3. DEVELOPER IS RESPONSIBLE FOR METER BOX AND PIPING SYSTEM UNTIL THE METER IS INSTALLED AND WATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY THE DEVELOPER, WHO SHALL GUARANTEE, FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO THE DEPARTMENT OF PUBLIC WORKS SYSTEMS, ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIALS. DEVELOPER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL VALVES, STOPS, AND METER BOXES REMAIN CLEAR OF SIDEWALKS, DRIVEWAYS, CURB AND OTHER OBSTRUCTIONS.
4. THE DEPARTMENT OF PUBLIC WORKS ACTIVITY IS LIMITED TO INSTALLATION OF THE WATER METER AND INSPECTION OF CONNECTIONS TO THE CITY WATER SYSTEMS. FOR MAINTENANCE PURPOSES, THE DEPARTMENT OF PUBLIC WORKS RESPONSIBILITY ENDS AT THE WATER METER.
5. NO METER BOX SHALL BE SET IN A SIDEWALK, DRIVEWAY, CURB AREA WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
6. PIPING AND TUBING IN THE STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN A PIT SAND MATERIAL AND ENCASED IN A SCHEDULE 40 PVC CONDUIT SLEEVE, AS REQUIRED IN THE SPECIFICATIONS. SERVICE LINES SHALL HAVE A MINIMUM COVER BELOW FINAL GRADE OF THIRTY-SIX (36") INCHES.
7. PRV WILL MEET ANSI/ASSE 1003-2009 WATER PRESSURE REDUCING VALVE REQUIREMENTS. REDUCED PRESSURE RANGES SHALL BE 15 PSI TO 150 PSI OR AS APPROVED FROM THE DEPARTMENT OF PUBLIC WORKS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 10/14/11 REVISED 12/10/15
	SERVICE INSTALLATION MAIN IN TERRACE		STANDARD NO. DET-824-03
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		1 OF 2

SERVICE ^①	CONDUIT ^②
3/4" OR 1"	3"
1 1/2" ③	4"

NOTE:

1. SERVICE TUBING SHALL BE TYPE "K" COPPER.
2. CONDUIT SHALL BE SCHEDULE 40 PVC.
3. TUBING FROM MAIN TO FITTING SHALL BE 1 1/2" MINIMUM WHEN CONNECTING DOUBLE METER FROM SINGLE TAP CONNECTION.



NOTES:

1. METER RELOCATION CONTRACTS MAY INCLUDE SETTING METER BOX, BASE AND CURB STOP.
2. SEE TAPPING SCHEDULE ON SHEET DET-824-04
3. ALL COPPER TUBING PLACED UNDER PAVEMENT FOR LONG SERVICE SHALL BE PLACED INSIDE A MINIMUM 3" SCHEDULE 40 PVC CASING.
4. PRV WILL MEET ANSI/ASSE 1003-2009 WATER PRESSURE REDUCING VALVE REQUIREMENTS. REDUCED PRESSURE RANGES SHALL BE 15 PSI TO 150 PSI OR AS APPROVED FROM THE DEPARTMENT OF PUBLIC WORKS.

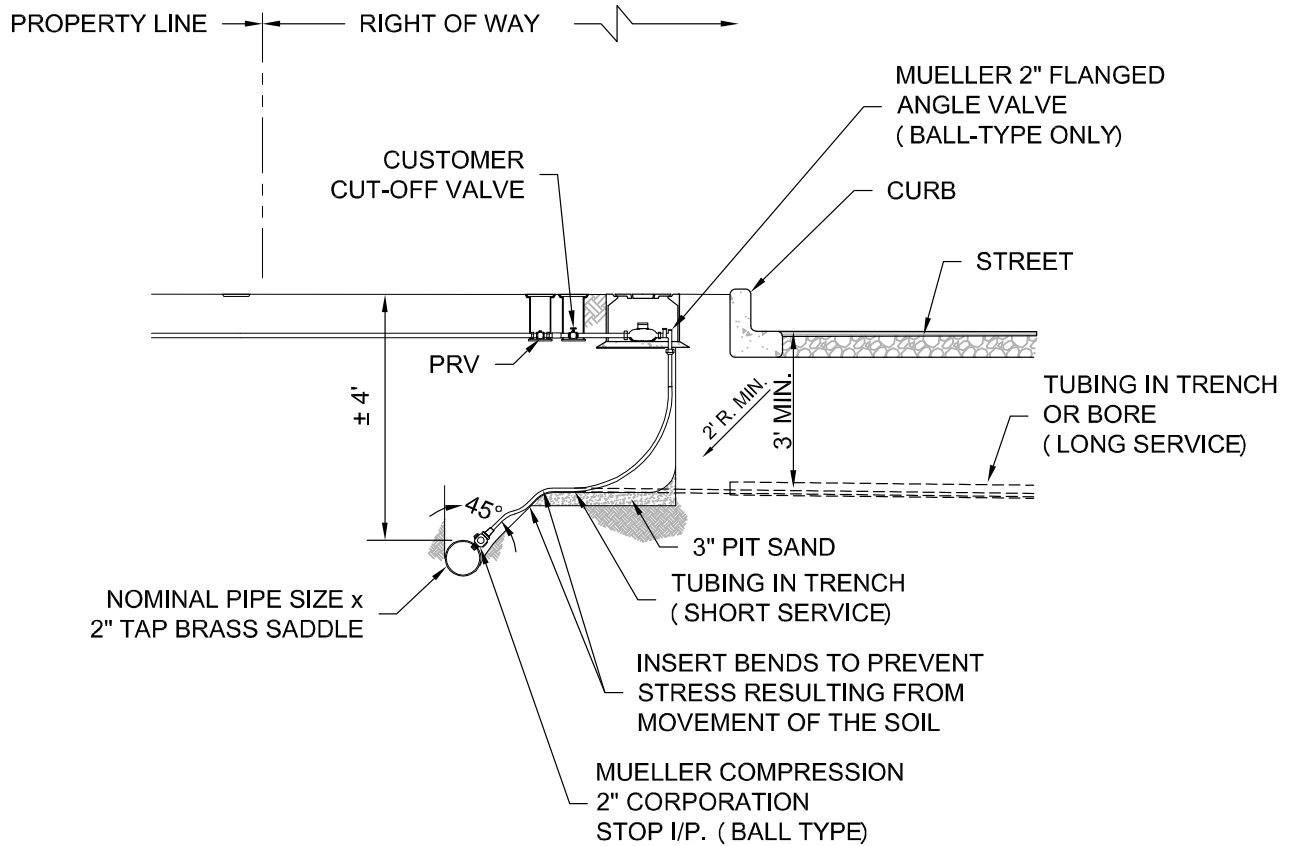
INSULATION
COUPLING
COMPONENT
- 3/4"
- 1"

METER / METER BOX SCHEDULE	
METER SIZE	METER BOX
5/8", 3/4" & 1"	C.I. OVAL, U.C. MATERIAL SPECIFICATION XX-XX



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
SERVICE INSTALLATION MAIN IN TERRACE	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 10/14/11
REVISED 11/24/16
STANDARD NO.
DET-824-03
2 OF 2



1 1/2" & 2" SERVICE TAP

NOTE:

1. WHEN INSTALLING SERVICES 3/4" TO 2" SIZES TO MAINS OF 6" TO 16" PIPE DIAMETER OF A.C., C.I., D.I., OR PVC MATERIAL, THE MAIN SHALL BE TAPPED WITH SERVICE SADDLE.
2. PRV WILL MEET ANSI/ASSE 1003-2009 WATER PRESSURE REDUCING VALVE REQUIREMENTS. REDUCED PRESSURE RANGES SHALL BE 15 PSI TO 150 PSI OR AS APPROVED FROM THE DEPARTMENT OF PUBLIC WORKS.



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS

SERVICE INSTALLATION TAPPING SCHEDULE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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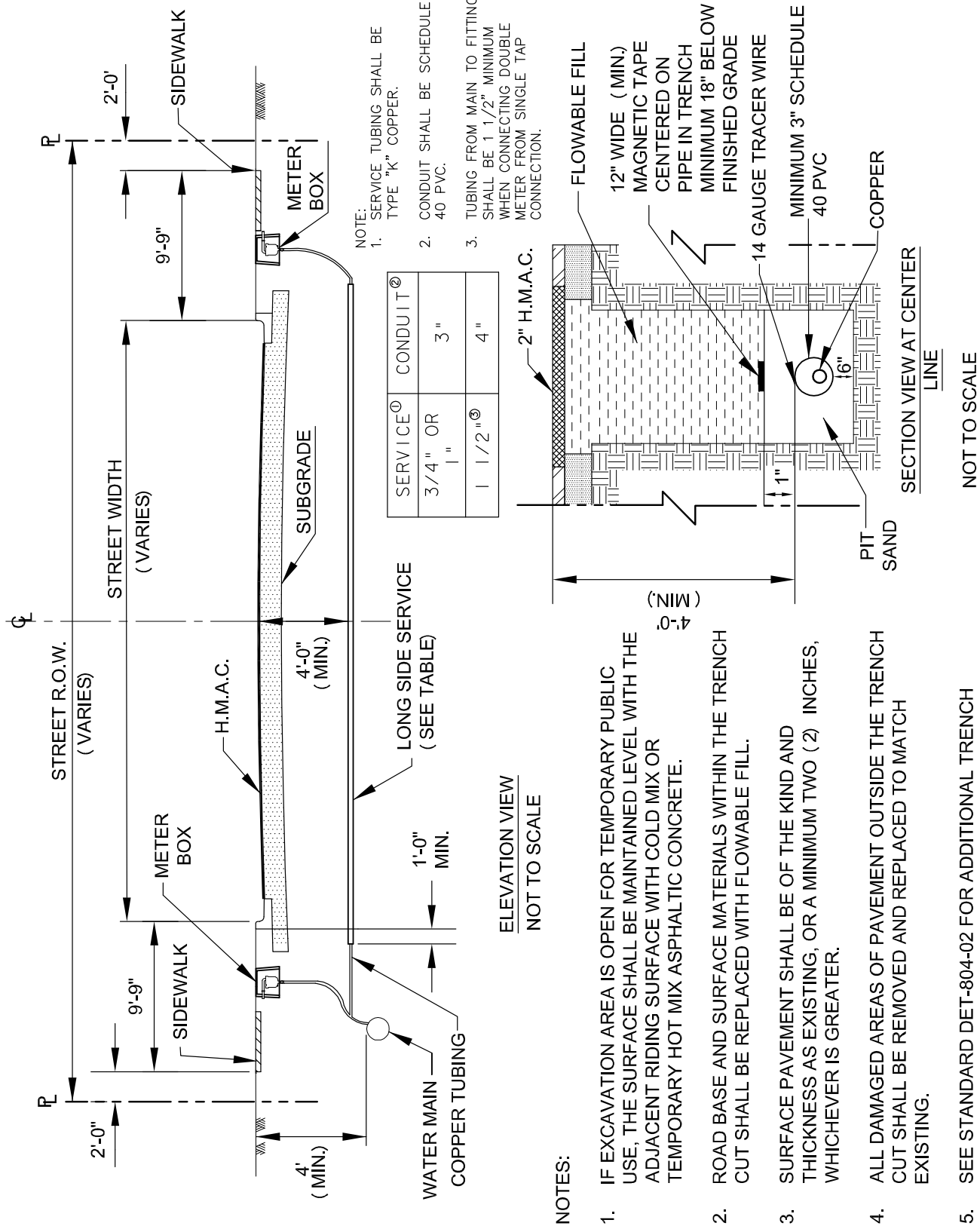
ADOPTED 10/14/11
REVISED 12/10/15

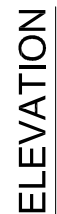
STANDARD NO.
DET-824-04
1 OF 1



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
SERVICE WATER CASING	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED	11/8/18
REVISED	12/2/18
STANDARD NO. DET-824-05	
1	OF 1

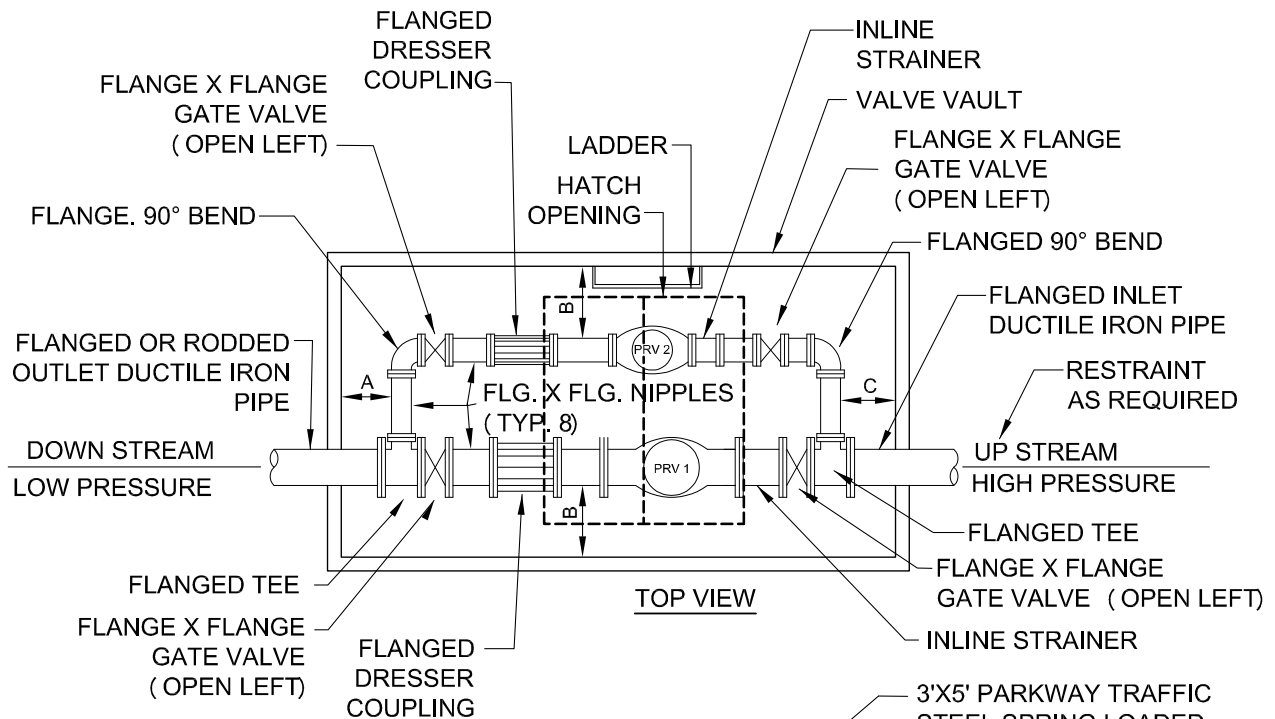




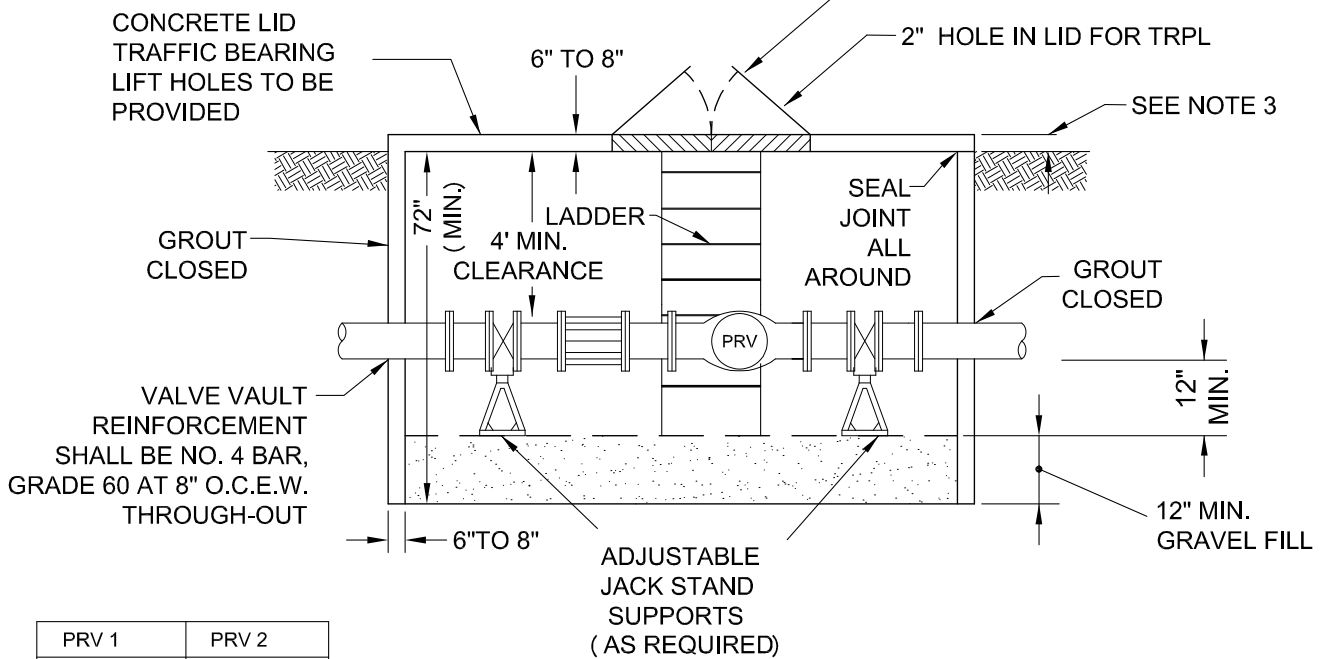
NOTES:

1. EXTERIOR SURFACES OF EXPOSED AIR VENT PIPE AND DUCTILE IRON PIPE SUPPORT SHALL BE PAINTED WITH RUST-OLEUM ACRYLIC 5225 (SAFETY BLUE) , OR EQUAL, PER COATING MANUFACTURER'S INSTRUCTIONS PRIOR TO INSTALLATION.
2. AIR VENT PIPE INSTALLATION SHALL BE AS NEAR AS PRACTICAL TO THE RIGHT-OF-WAY LINE OR EASEMENT LINE AS INDICATED ON THE PLANS.
3. CONCRETE METER BOX PENETRATION SHALL BE CORE BIT DRILLED. VOID SHALL BE FILLED BY PRESS-SEAL GASKET CORP. PSX RESILIENT CONNECTOR MEETING ASTM C923 OR APPROVED EQUAL.
4. IN UNDEVELOPED AND DEVELOPED AREAS, THE AIR RELEASE VENT PIPE SHALL BE FIVE (5') FEET IN HEIGHT SUPPORTED BY FOUR (4") INCH STEEL PIPE, WHICH HAS BEEN PAINTED BLUE AND FILLED WITH CONCRETE (PAINTED ON TOP) . IN DEVELOPED AREAS THE AIR RELEASE PIPE, SHALL BE EIGHT (8") TO TWELVE (12") INCHES IN HEIGHT AND LOCATED NOT TO CONFLICT WITH THE SIDEWALK.
5. AUTOMATIC COMBINATION AIR/VACUUM RELEASE VALVE SHALL BE INSTALLED IN A MANNER, WHICH WILL ALLOW REMOVAL OF ASSEMBLY, WITHOUT REMOVAL OF THE CONCRETE METER BOX.
6. THREAD TO COMPRESSION BRASS ELBOW, ALLOWED IF NECESSARY DUE TO DEPTH LIMITATIONS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/10/16
	AIR-VACUUM RELEASE VALVE		STANDARD NO. DET-824-06 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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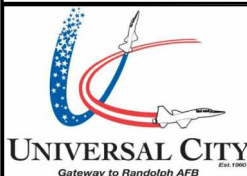


TOP VIEW



ELEVATION

PRV 1	PRV 2
4"	2"
6"	2"
8"	2"
8"	4"
12"	4"



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
DUAL PRV INSTALLATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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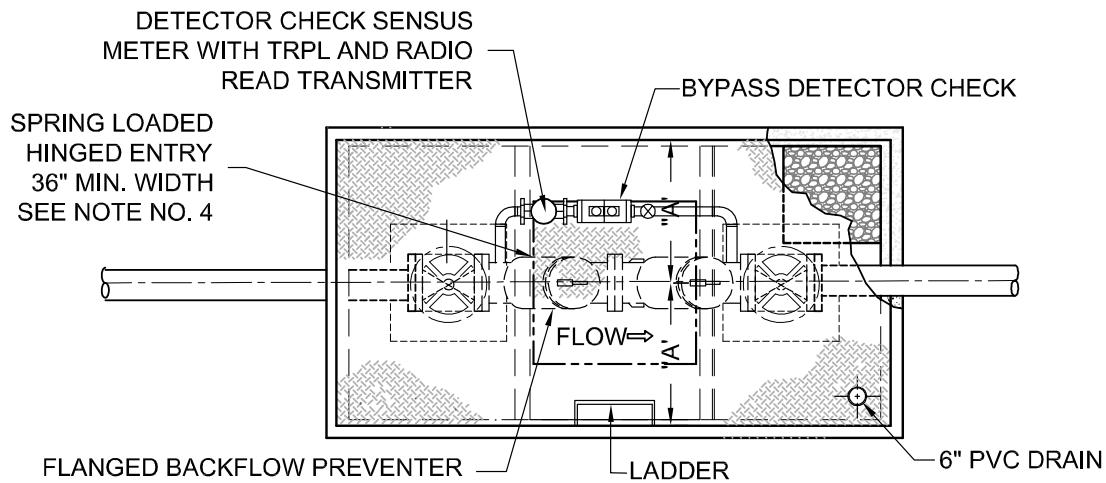
ADOPTED 8/18/11
REVISED 7/10/16

STANDARD NO.
DET-824-07
1 OF 2

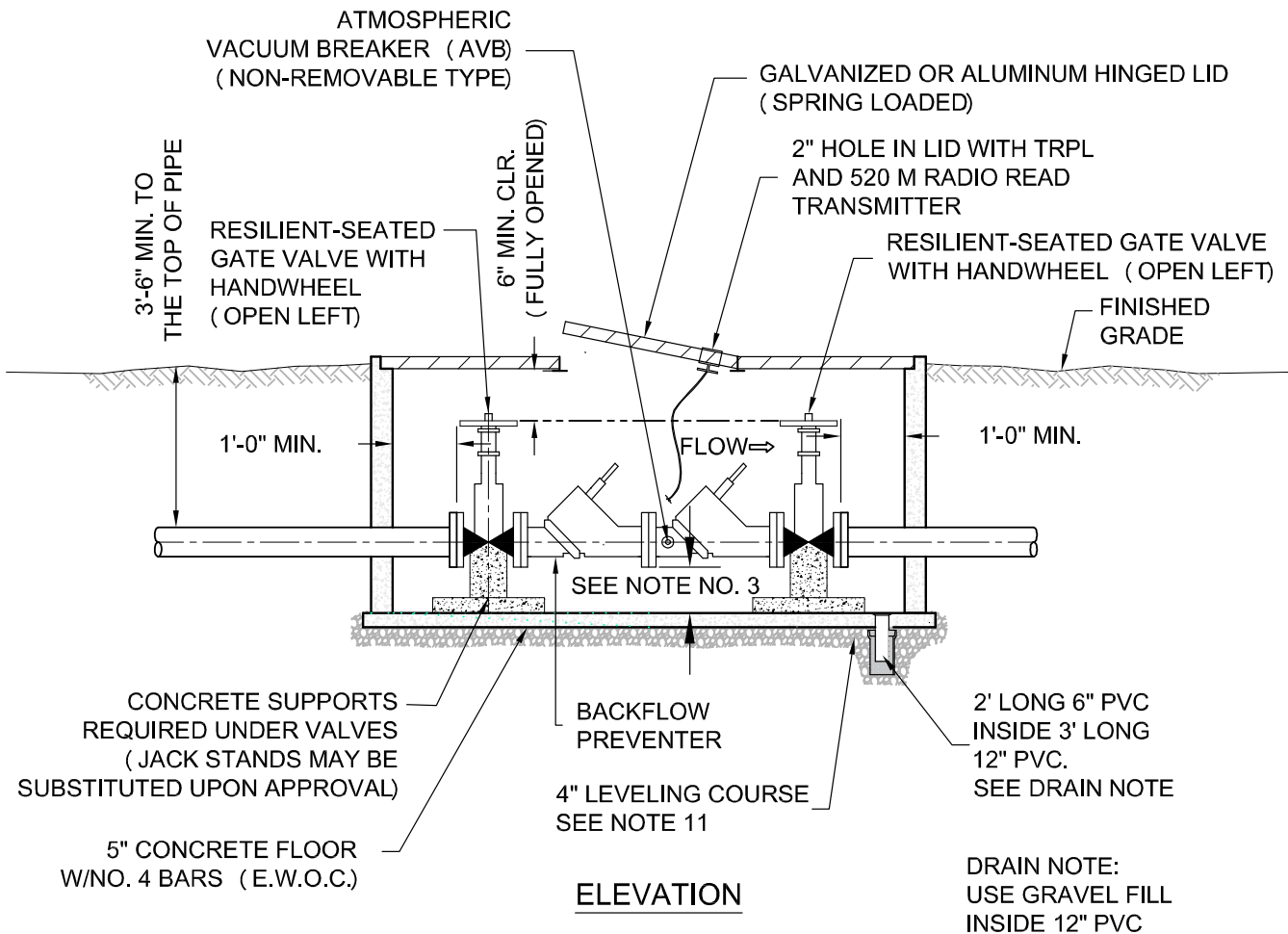
NOTES:

1. ALL THE PIPES IN THE PRESSURE REDUCING VALVE/BY-PASS INSTALLATION TO BE THREADED BRASS OR FLANGED DUCTILE IRON OR CAST IRON PIPE.
2. PRESSURE REDUCING VALVE SHALL BE IN ACCORDANCE WITH CITY STANDARDS.
3. IF LID IS IN PAVEMENT OR CONCRETE, IT SHALL BE FLUSH WITH THE PAVEMENT OR CONCRETE. LID SHALL BE TRAFFIC BEARING SURFACE. IF LID IS IN NATURAL GROUND OR UNDISTURBED EARTH, SPRING LOADED LID IT SHALL BE TWO (2") INCHES ABOVE FINISHED GRADE.
4. IF VALVE IS NOT ATTACHED TO A FLANGED FITTING, THEN ALL FITTINGS SHALL BE MEGA-LUGGED RETAINER GLANDS OR APPROVED EQUIVALENT.
5. P.R.V.'S SHALL NOT BE PLACED WITHIN THE CURB.
6. IF THE VAULT BECOMES TRAFFIC BEARING REFER TO THE DIRECTOR OF PUBLIC WORKS FOR THE CITY.
7. PROVIDE THE ALTITUDE/ELEVATION AND THE PRESSURE ON THE LOW SIDE OF THE P.R.V. TO THE DIRECTOR OF PUBLIC WORKS FOR THE CITY.
8. VERTICAL GATE VALVES SHALL BE WHEEL OPERATED AND OPEN LEFT.
9. ALL SLEEVES TO BE ON THE DOWN STREAM SIDE FOR SAFETY PURPOSES.
10. ALL UPSTREAM OR HIGH PRESSURE MATERIALS TO BE FLANGED.
11. ALL NON-FLANGED PIPE TO BE INSTALLED WITH MEGA-LUG RETAINER GLAND OR AN APPROVED EQUIVALENT/BETTER RETAINER.
12. ALL VALVES SHALL HAVE JACK STAND SUPPORTS.
13. ALL POINTS "A" THRU "D" TO HAVE A MINIMUM CLEARANCE OF EIGHTEEN (18") INCHES.
14. UPSTREAM PIPE SHOULD BE RODDED FOR ADDED SAFETY TO GUARD AGAINST BLOW OFF.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/10/16
	DUAL PRV INSTALLATION		
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		
			STANDARD NO. DET-824-07 2 OF 2



PLAN



ELEVATION



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

**BACKFLOW PREVENTER
DETECTOR CHECK**


THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

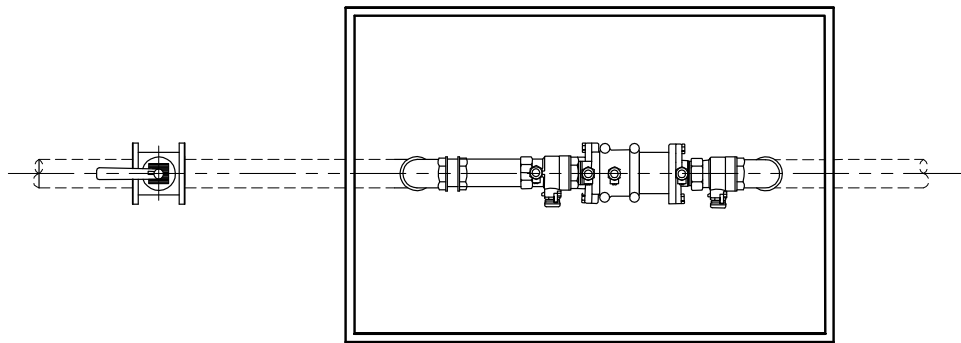
ADOPTED 11/8/18
REVISED 7/22/16

STANDARD NO.
DET-824-08
1 OF 2

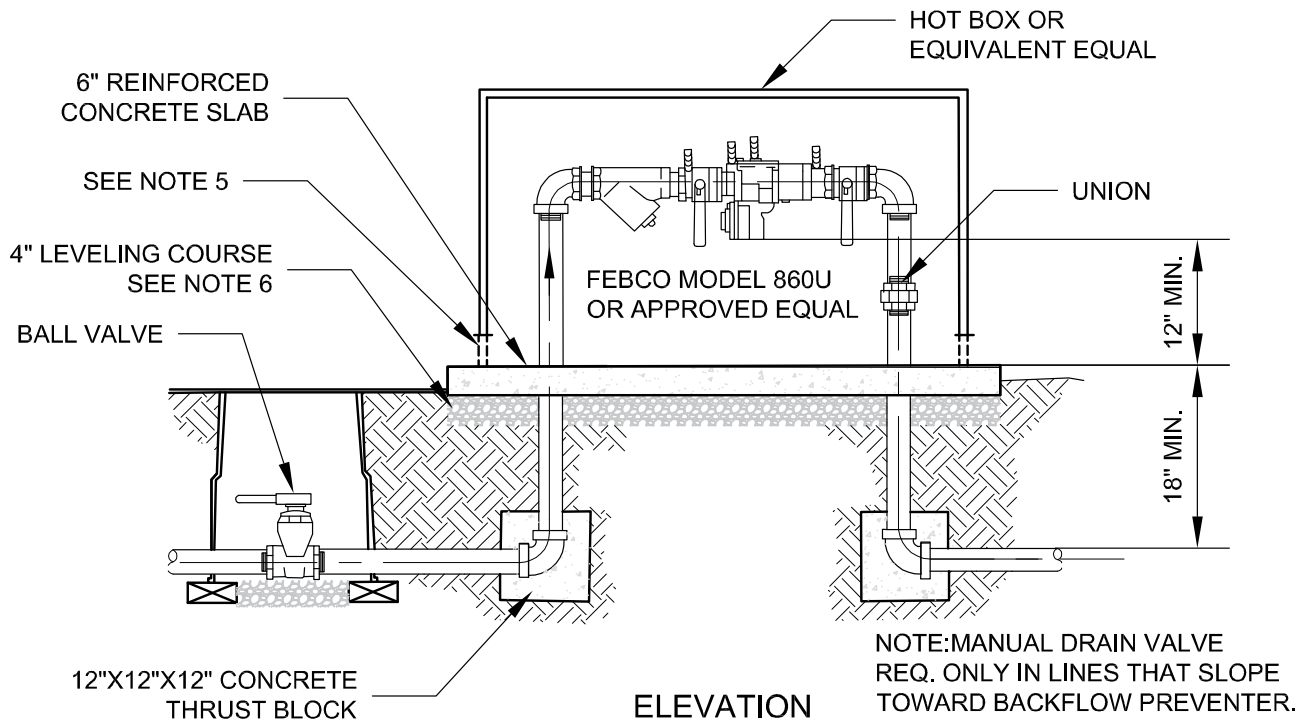
NOTES:

1. MINIMUM INSTALLATION STANDARDS:
 - A. DUCTILE IRON PIPE SHALL BE REQUIRED FOR ALL PIPE ENTERING/EXITING OR INSIDE THE VAULT.
 - B. INSTALL IN AN ACCESSIBLE LOCATION FOR INSPECTION AND SERVICING.
 - C. FLUSH PIPELINES THOROUGHLY PRIOR TO INSTALLING BACKFLOW ASSEMBLIES.
 - D. INSTALL ON THE MAIN LINE TO THE IRRIGATION SYSTEM UPSTREAM OF THE SHUT-OFF VALVES, OR DOWNSTREAM OF THE LAST SHUT-OFF VALVE.
 - E. INSTALL A MINIMUM OF 12 INCHES ABOVE THE HIGHEST OUTLET IN SERVICE.
 - F. NEVER INSTALL IN A SITUATION WHERE IT WILL BE UNDER CONTINUOUS OPERATING PRESSURE FOR MORE THAN 12 HOURS IN A 24 HOUR PERIOD.
 - G. PROTECT THE ASSEMBLY FROM FREEZING BY DRAINING IT IN THE WINTER MONTHS WHEN THE SYSTEM IS NOT IN USE.
 - H. T.C.E.Q. RULES AND REGULATIONS WILL BE STRICTLY ENFORCED TO T.A.C, CHAPTER 290.
2. ALL TEST COCKS MUST BE REDIRECTED UPWARD AND PLUGGED.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION, UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS. BACKFLOW PREVENTER SHALL HAVE 1'-0" MINIMUM CLEARANCE TO THE LOWEST PART OF THE BACKFLOW PREVENTER TO THE HIGHEST POINT OF THE CONCRETE FLOOR.
4. ACCESS OPENING MUST BE LARGE ENOUGH TO REMOVE LARGEST PORTION OF BACKFLOW PREVENTER, BUT NOT LESS THAN 36" IN ANY DIRECTION.
5. TEST AND MAINTENANCE REPORT SHALL BE RECEIVED BY THE DEPARTMENT OF PUBLIC WORKS WITHIN 5 DAYS AFTER BEING INSTALLED. A MAINTENANCE SCHEDULE WILL BE ESTABLISHED BY THE DEPARTMENT OF PUBLIC WORKS.
6. BACKFLOW PREVENTER TO BE CENTERED ("A") IN THE VAULT PROVIDE ADEQUATE ROOM/CLEARANCE FOR MAINTENANCE WITHIN THE VAULT.
7. INLET AND OUTLET PIPING SHALL BE RESTRAINT WITH GALVANIZED ALL-THREAD RETAINER RODS.
8. SUPPLY DETECTOR CHECK BYPASS FOR DETECTOR CHECK SENSUS METER WITH 520 M RADIO TRANSMITTER.
9. CUT OUT 2" HOLE IN LID AND MOUNT TOUCH READ PIT LID (TRPL) AND 520 M RADIO READ TRANSMITTER TO SENSUS METER.
10. ALL VALVES SHALL OPEN LEFT.
11. 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR GRAVEL AGGREGATE SIZE.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 11/8/18 REVISED 7/22/18
	BACKFLOW PREVENTER DETECTOR CHECK		STANDARD NO.
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		DET-824-08
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		2 OF 2



PLAN



ELEVATION

NOTES:

1. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTAL AND PLUMB.
3. ALL CLEARANCES APPLY TO IN-BUILDING, AND VAULT INSTALLATIONS.
4. CONCRETE STRUCTURE TO COMPLY WITH LOCAL BUILDING CODES.
5. ENCLOSURE SHALL INCLUDE A DRAIN PORT CAPABLE OF DRAINING A FULL RELIEF VALVE DISCHARGE.
6. 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR AGGREGATE SIZE.
7. A DOOR OR OTHER APPROVED ACCESS SHALL BE PROVIDED.
8. ALL ASSEMBLIES 2 1/2" AND LARGER SHALL BE FLANGED.
9. ALL VALVES SHALL OPEN LEFT.
10. SUPPLY CITY WITH TEST REPORT UPON INSTALLATION.



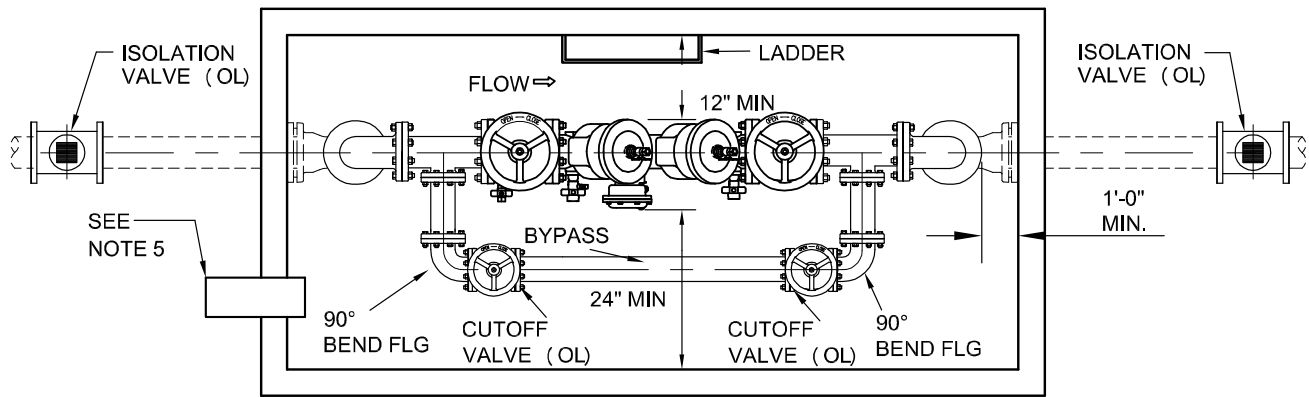
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

REDUCED PRESSURE BACKFLOW ASSEMBLY
3/4' TO 3'

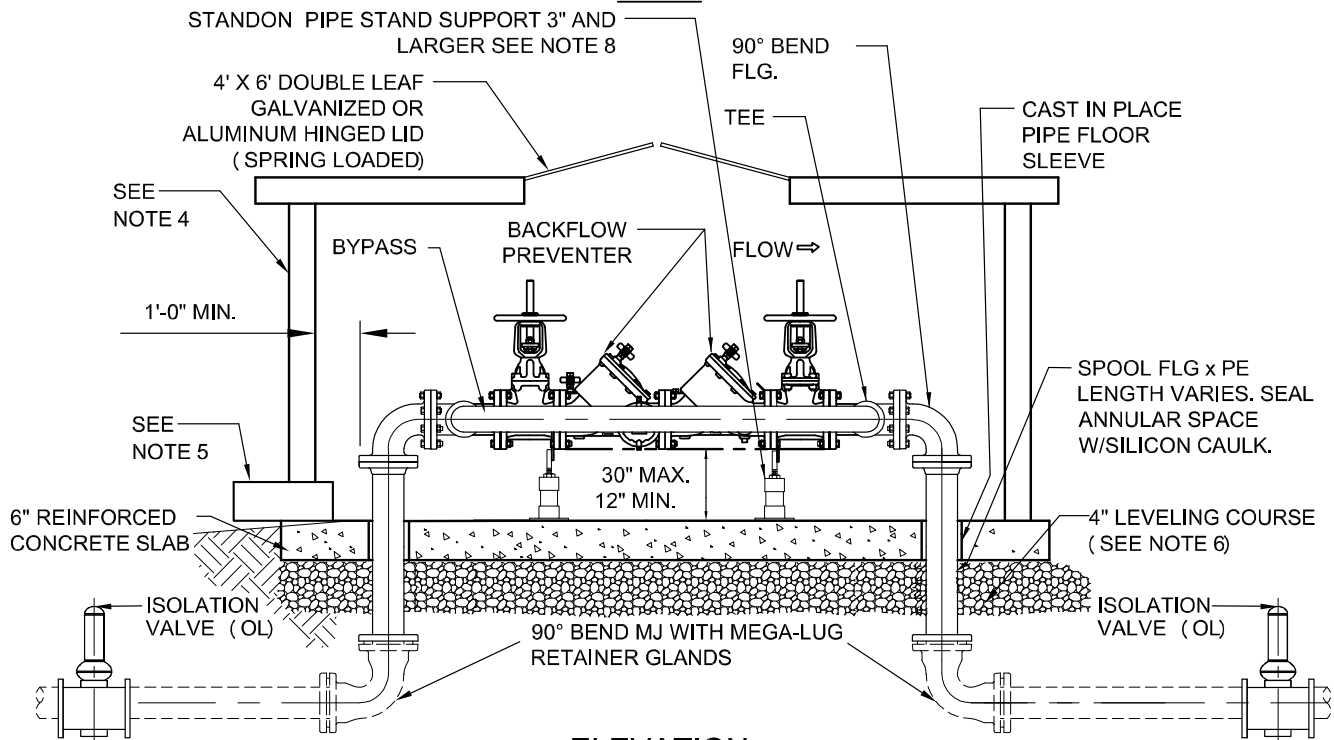
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 9/14/16
REVISED

STANDARD NO.
DET-824-09
1 OF 2



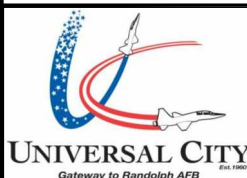
PLAN



ELEVATION

NOTES:

1. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTAL AND PLUMB.
3. ALL CLEARANCES APPLY TO IN-BUILDING, AND VAULT INSTALLATIONS.
4. CONCRETE STRUCTURE TO COMPLY WITH LOCAL BUILDING CODES.
5. ENCLOSURE SHALL INCLUDE A BORE SIGHTED DRAIN TO DAYLIGHT CAPABLE OF DRAINING A FULL RELIEF VALVE DISCHARGE.
6. 4\"/>
7. A DOOR OR OTHER APPROVED ACCESS SHALL BE PROVIDED.
8. ALL ASSEMBLIES 2 1/2\"/>
9. ALL VALVES SHALL OPEN LEFT.



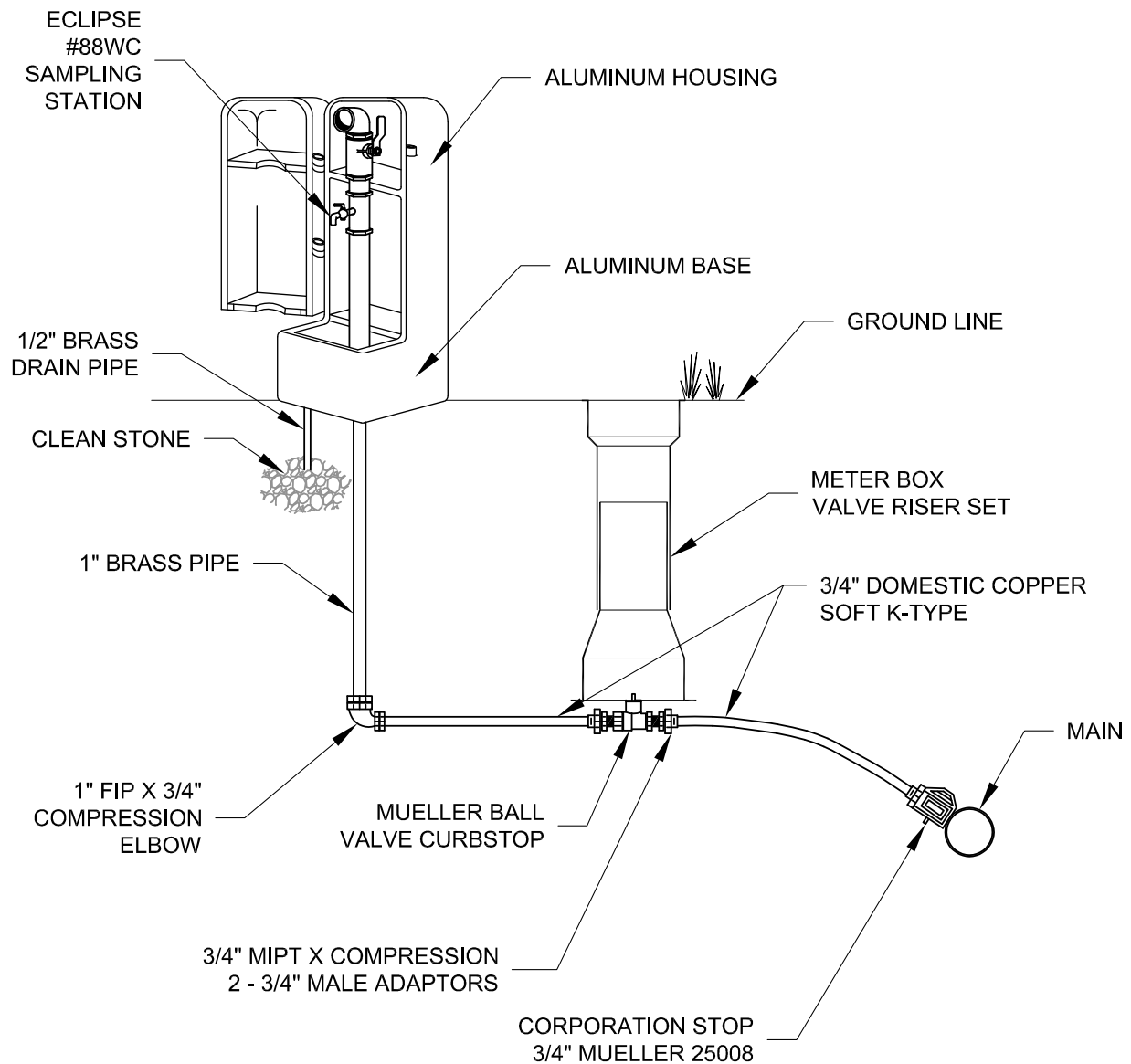
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

REDUCED PRESSURE BACKFLOW ASSEMBLY
4\"/>

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/8/13
REVISED 9/14/18

STANDARD NO.
DET-824-09
2 OF 2

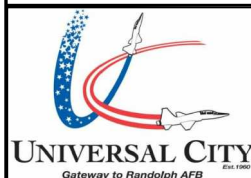


ECLIPSE #88 WC SAMPLING STATION

NOT TO SCALE

NOTES:

1. Sampling Stations shall be 1' bury, with a 1" MIP inlet, and a 1" threaded discharge. A 1/4" bent-nose sampling bibb shall be located before the discharge.
2. All stations shall be enclosed in a lockable, non-removable, aluminum-cast housing.
3. When opened, the station shall require no key for operation, and the water will flow in an all brass waterway.
4. All working parts will be of lead free brass and serviceable from above ground with no digging.
5. A 1" ball valve will control the water flow, and be located after the sampling bibb.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

SAMPLING STATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

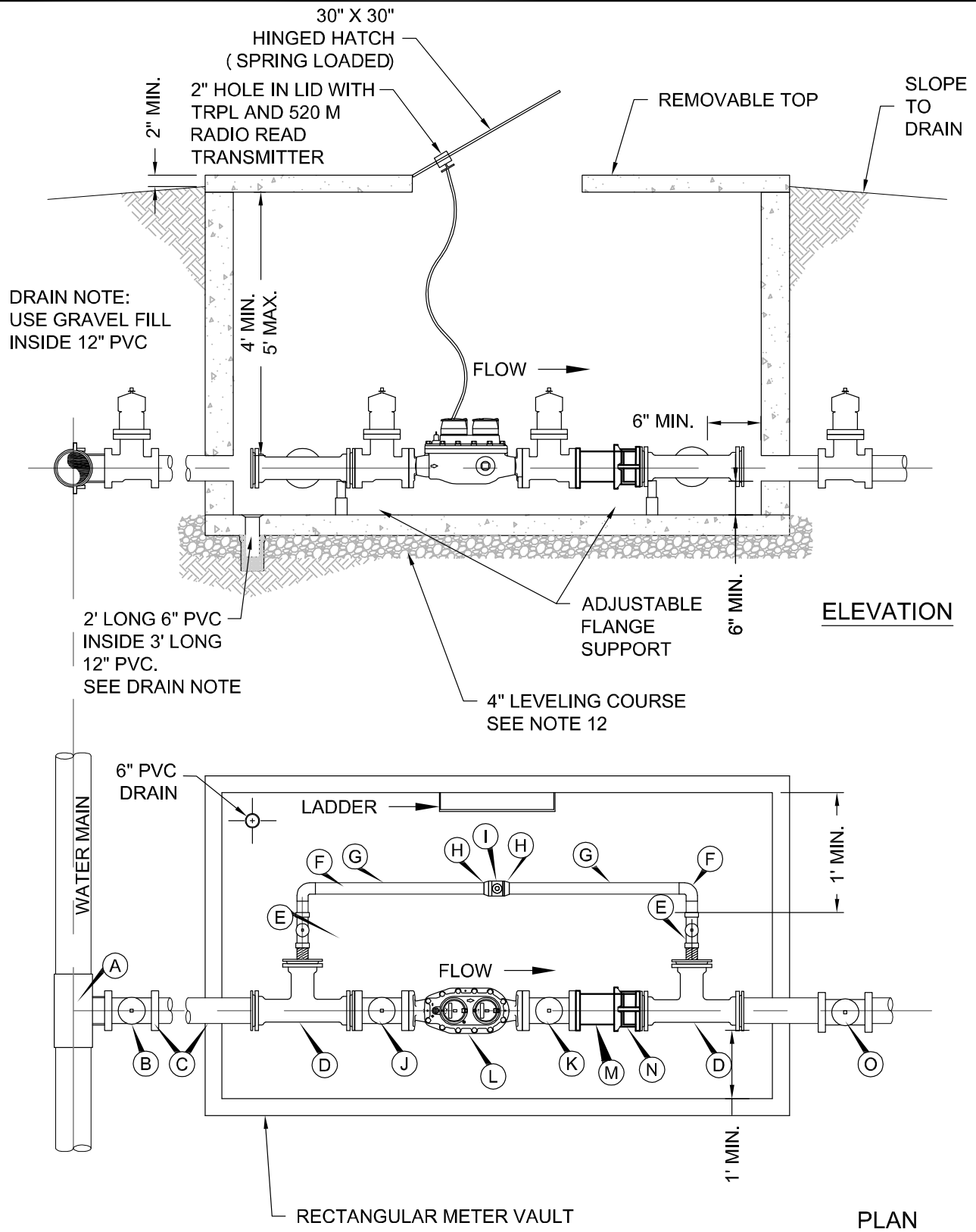
RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/8/13
REVISED 7/10/16

STANDARD NO.

DET-824-10

1 OF 1



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
BELOW GROUND COMPOUND METERS	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	


ADOPTED 8/18/11 REVISED 7/22/16
STANDARD NO. DET-824-11 1 OF 2

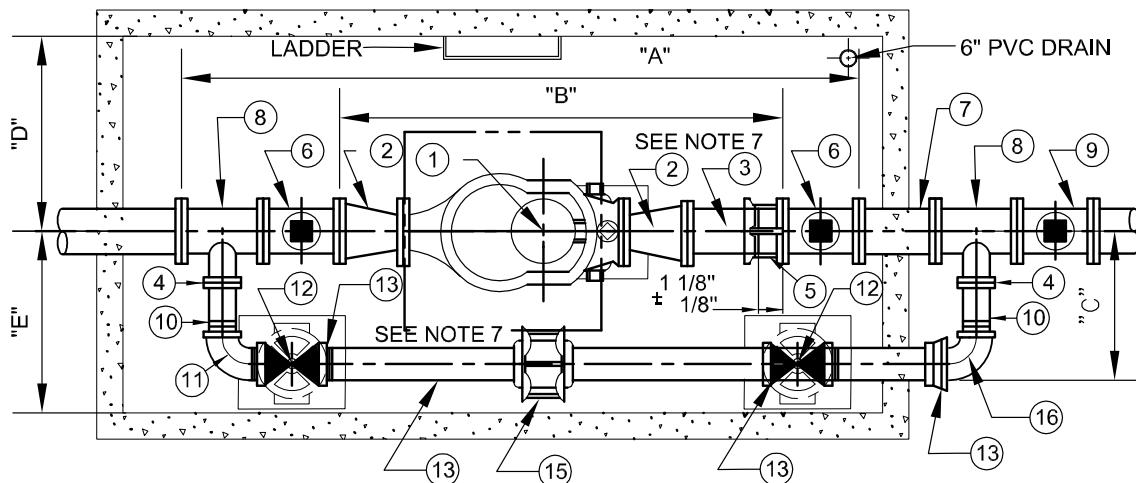
MATERIALS:

- A) APPROVED TAPPING SADDLE AND SLEEVE.
- B) TAPPING VALVE (GATE) IRON BODY WITH M.J. OUTLET.
- C) DUCTILE IRON OR CAST IRON PIPE, NOT LESS THAN FOUR (4") INCH DIAMETER.
- D) TAPPED, CAST IRON TEE-M.J. x SPIGOT.
- E) 2" BRASS NIPPLE WITH 2" GATE VALVE.
- F) COPPER TO MALE IRON PIPE, QUARTER BEND COUPLINGS.
- G) 2" COPPER PIPE.
- H) COPPER TO MALE BRASS PIPE FITTINGS.
- I) 2" BYPASS METER (OMNI SENSUS METER OR LATEST) .
- J) SHUT-OFF VALVE (RW) CAST IRON, MINIMUM FOUR (4") INCH, FLANGE x M.J.
- K) CUSTOMER'S VALVE (RW) CAST IRON FLANGED OMNI OR LATEST SENSUS METER VERSION APPROVED BY CITY.
- L) COMPOUND METER. OMNI OR LATEST SENSUS METER VERSION APPROVED BY THE CITY.
- M) FLANGED x PLAIN END.
- N) FLANGED COUPLING ADAPTER.
- O) ISOLATION VALVE (RW) CAST IRON, FLANGE x M.J.

NOTES:

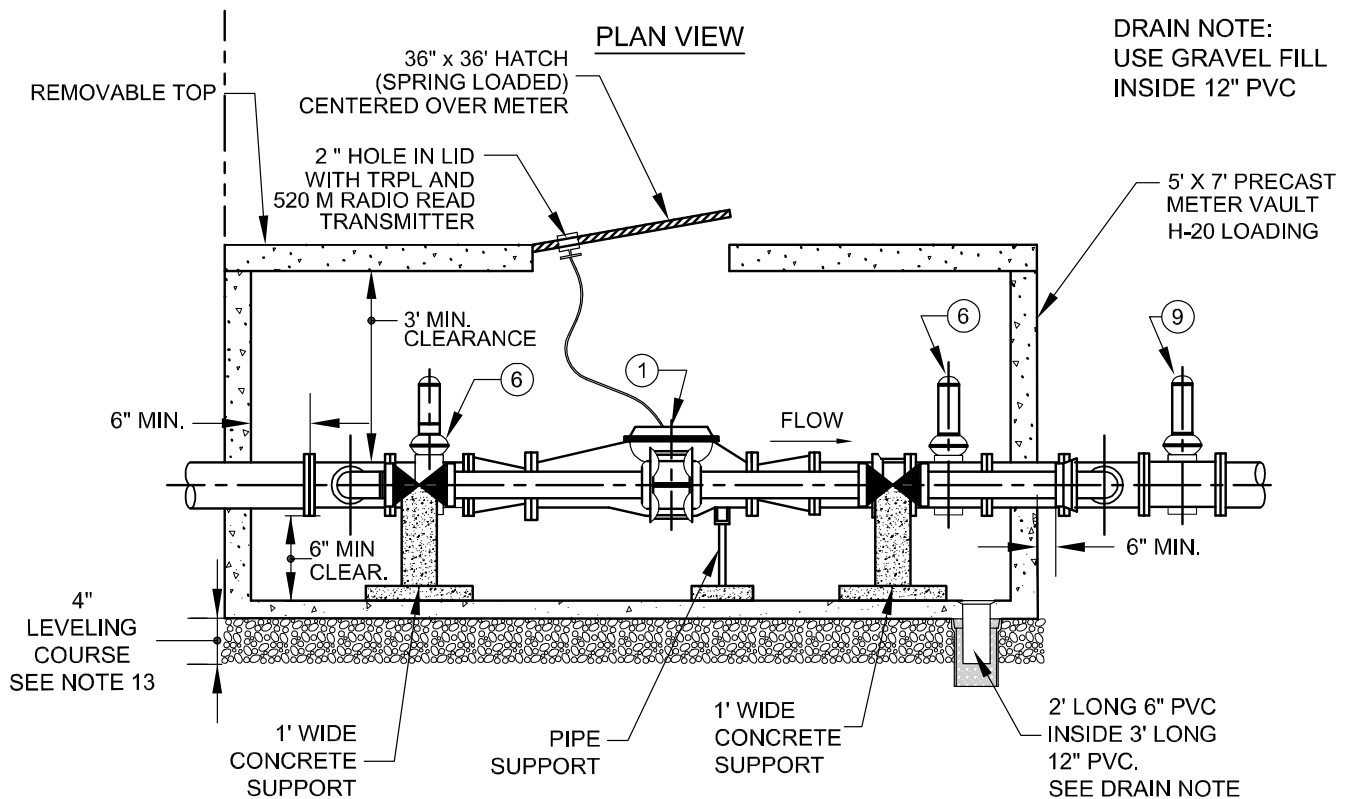
1. VALVE, METER, FITTINGS, AND VAULT, ETC. TO BE FURNISHED AND INSTALLED BY THE CUSTOMER.
2. BOX MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC;
3. PIPE AND FITTINGS TO BE DUCTILE IRON OR CAST IRON EXCEPT AS NOTED. NO SOLDERED JOINTS.
4. NO RISING STEM OR WHEEL OPERATED VALVES EXCEPT ON TWO (2") INCH BY-PASS VALVE.
5. ROD RESTRAINT IS REQUIRED AT ALL MECHANICAL TYPE JOINTS.
6. TOP OF BOX MUST BE TWO (2") INCHES ABOVE GROUND OR FLUSH WITH PAVEMENT SURFACE.
7. METER BOX TO BE SET AFTER METER IS INSTALLED. SIDE NOTCHES IN BOX TO BE FILLED WITH MORTAR AFTER INSTALLATION OF THE PIPE.
8. ANY WORK BY THE CUSTOMER ON THE CITY SIDE OF THE METER, REQUIRES PLANS BY TEXAS REGISTERED/LICENSED PROFESSIONAL ENGINEER.
9. WHERE THERE IS A LOOP SYSTEM, WITH MORE THAN ONE METER APPROVED CHECK VALVES SHALL BE INSTALLED DOWN STREAM OF THE PROPERTY OWNER'S GATE VALVE (J) AT EACH METER. BACKFLOW PREVENTERS MAY BE REQUIRED WITHIN THE SYSTEM BY THE BUILDING INSPECTION DEPARTMENT.
10. CUT OUT 2" HOLE IN LID AND MOUNT TOUCH READ PIT LID (TRPL) AND 520 M RADIO READ TRANSMITTER TO SENSUS METER.
11. ALL VALVES SHALL OPEN LEFT.
12. 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR AGGREGATE SIZE.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/22/15
	BELOW GROUND COMPOUND METERS		STANDARD NO.
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		DET-824-11
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		2 OF 2



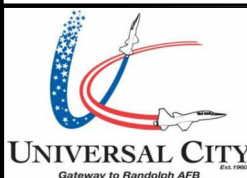
PLAN VIEW

DRAIN NOTE:
USE GRAVEL FILL
INSIDE 12" PVC



ELEVATION

No.	NAME	LENGTH
A	OVERALL LENGTH	6'-4"
B	METER + SPOOL + FCA	3'-8 1/2"
C	CENTER OF MAINLINE TO OUTSIDE OF BYPASS	1'-3"
D	CENTERLINE OF MAINLINE TO INSIDE OF VAULT	2'-6"
E	CENTERLINE OF MAINLINE TO INSIDE OF VAULT	2'-6"



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

3' METER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/8/18
REVISED 7/22/18


STANDARD NO.
DET-824-12
1 OF 2

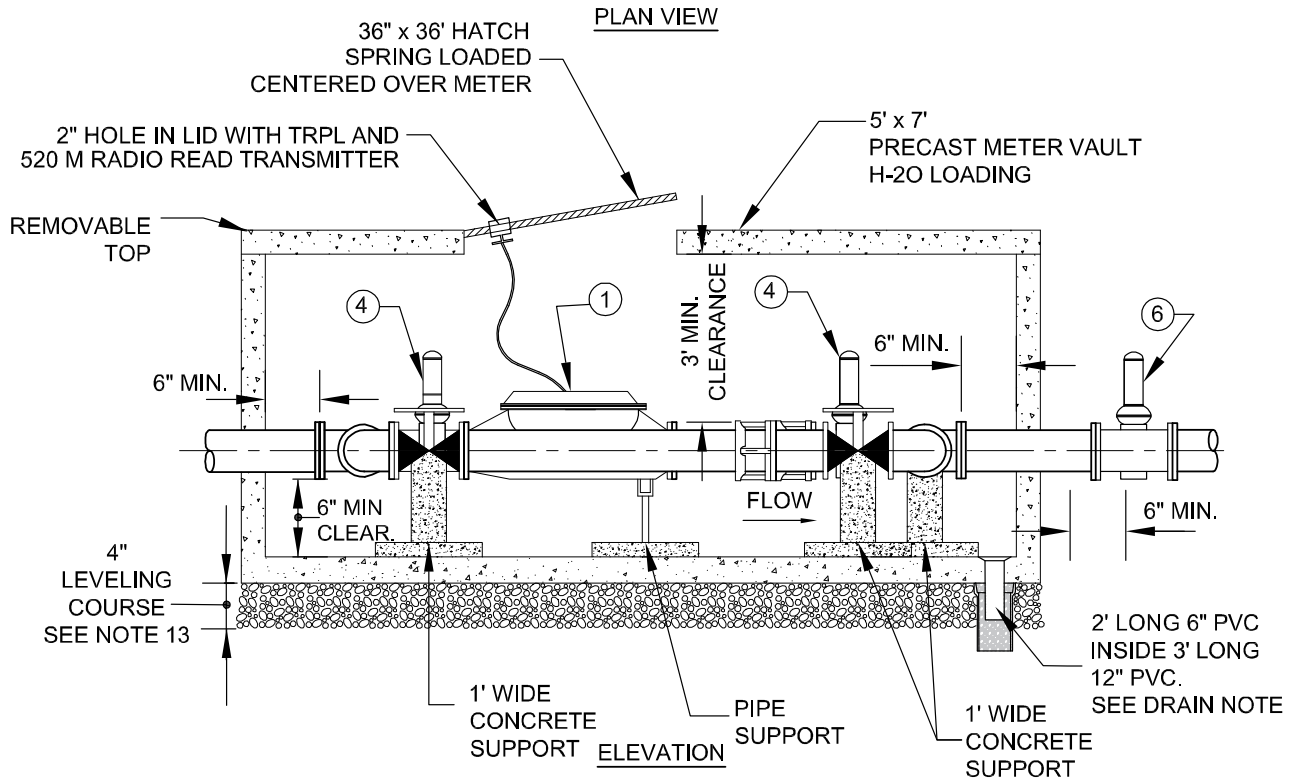
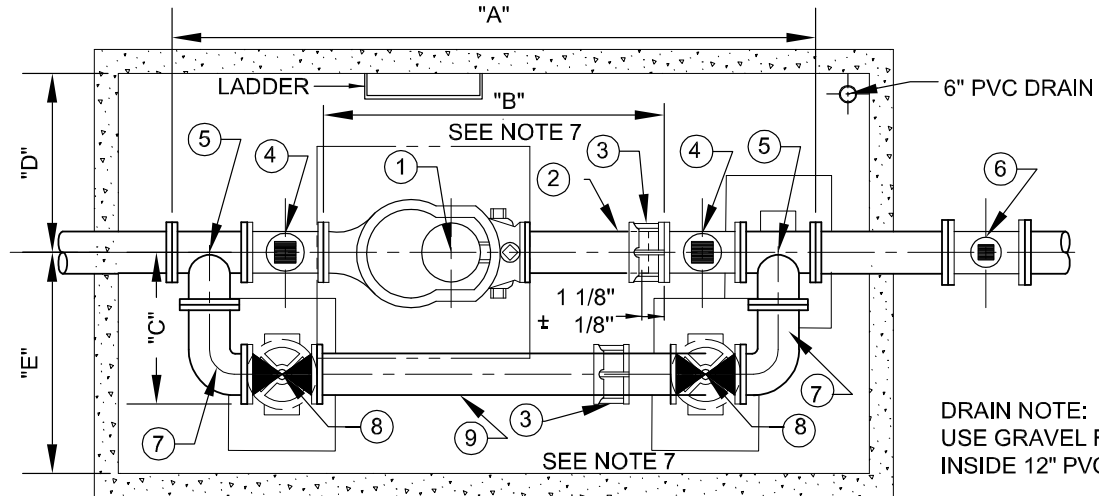
NO.	NAME	LENGTH
1	3" METER	1'-5"
2	4" x 3" FLANGED REDUCER	7"
3	4" FLANGED x PLAIN END	1'-0"
4	4" COMPANION FLANGE	
5	4" FLANGED COUPLING ADAPTER	5"
6	4" GATE VALVE SQUARE NUT	9"
7	4" FLANGED SPOOL	12" MIN.
8	4" x 4" x 2" FLANGED TEE	1'-1"
9	PROPERTY OWNER'S 4" GATE VALVE SQUARE NUT	9"
10	2" x 8" BRASS NIPPLE	8"
11	2" STREET ELBOW 90°	
12	2" BRASS GATE VALVE	
13	COPPER TO IRON PIPE FITTING	
14	2" COPPER OR BRASS PIPE	
15	2" COUPLING	
16	2" ELBOW 90° BRASS	

*DIMENSIONS- SUBJECT TO CHANGE, CHECK WITH INSPECTOR

NOTES:

- PIPE AND METER SIZE SHALL BE AS DETERMINED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. REVIEW AND FIRE DEPARTMENT PLANS MUST BE PREPARED BY LICENSED/REGISTERED ENGINEER. INSTALLATION IS BY DEVELOPER.
- METER VAULT MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC.
- MAIN LINE AND BY-PASS VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BANDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE SQUARE OPERATING NUTS. BY-PASS VALVE WILL HAVE A HANDWHEEL. PROPERTY OWNER'S VALVE MUST BE LOCATED OUTSIDE OF THE DEPARTMENT OF PUBLIC WORKS METER VAULT.
- APPROVAL WILL BE NEEDED IF HEIGHT OF VAULT EXCEEDS 6'-0", METER MUST BE MODIFIED TO READ FROM TOP OF VAULT.
- HATCH OPENING WILL BE 36" x 36" SPRING LOADED.
- IRON PIPE TAPPING SLEEVE IN STREET RIGHT-OF-WAY SHALL BE IMBEDDED IN PIT SAND MATERIAL AS REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. BACKFILL ABOVE PIT SAND BEDDING AS REQUIRED.
- DOUBLE HARNESS M.J. WITH TIE RODS. ALL OTHER FITTINGS INSIDE VAULT WILL BE FLANGED.
- CONTACT THE DEPARTMENT OF PUBLIC WORKS OFFICE PRIOR TO THE INSTALLATION OF COMPOUND METERS FOR PROPER DOMESTIC DEMANDS.
- NOTCHES WHERE PIPING GOES THROUGH VAULT SHALL BE FILLED WITH MORTAR.
- TOP OF METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT.
- CUT OUT 2" HOLE AND MOUNT TOUCH READ PIT LID (TRPL) AND 520 M RADIO READ TRANSMITTER TO SENSUS METERS.
- ALL VALVES SHALL OPEN LEFT.
- 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR AGGREGATE SIZE.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 11/8/18 REVISED 7/22/18
	3' METER		STANDARD NO. DET-824-12 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



No.	NAME	LENGTH
A	OVERALL LENGTH	6'-7"
B	METER + SPOOL + FCA	2'-10 1/2"
C	CENTER OF MAINLINE TO OUTSIDE OF BYPASS	1'-5 1/2"
D	CENTERLINE OF MAINLINE TO INSIDE OF VAULT	2'-6"
E	CENTERLINE OF MAINLINE TO INSIDE OF VAULT	2'-6"



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

4' METER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/8/18
REVISED 7/22/18


STANDARD NO.
DET-824-13
1 OF 2

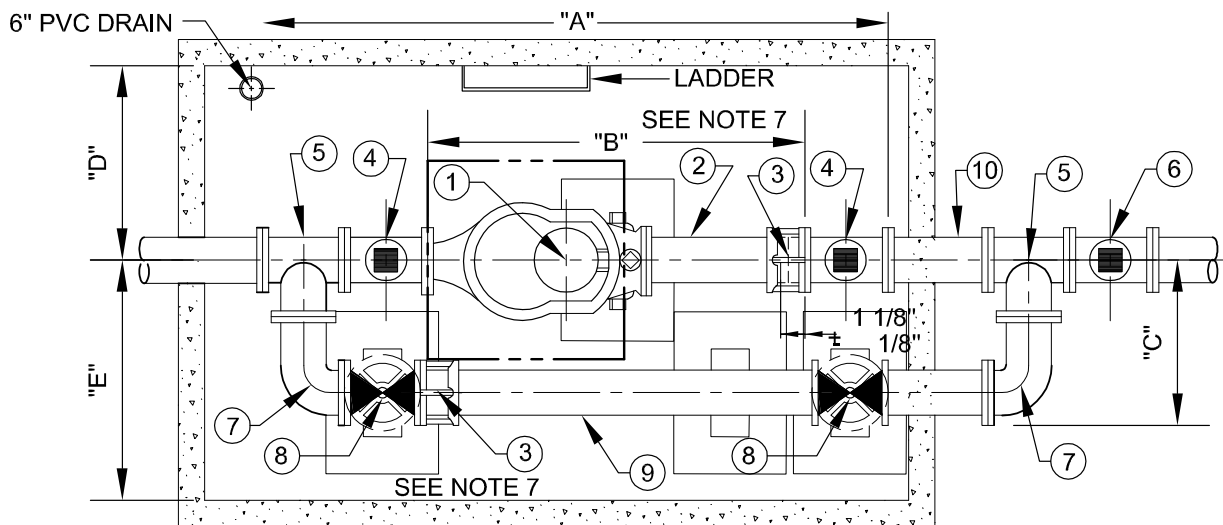
NO.	NAME	LENGTH
1	4" METER	1'-5"
2	4" FLANGED x PLAIN END	1'-0"
3	4" FLANGED COUPLING ADAPTER	5"
4	4" GATE VALVE SQUARE NUT	9"
5	4" x 4" x 4" FLANGED TEE	1'-1"
6	PROPERTY OWNER'S 4" GATE VALVE SQUARE NUT	9"
7	4" FLANGED LONG RADIUS ELBOW (90°)	
8	4" BY-PASS GATE VALVE WITH HANDWHEEL	9"
9	4" BY-PASS DUCTILE IRON PIPE	

*DIMENSIONS- SUBJECT TO CHANGE, CHECK WITH INSPECTOR

NOTES:

1. PIPE AND METER SIZE SHALL BE AS DETERMINED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. REVIEW AND FIRE DEPARTMENT PLANS MUST BE PREPARED BY LICENSED/REGISTERED ENGINEER. INSTALLATION IS BY DEVELOPER.
2. METER VAULT MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC.
3. MAIN LINE AND BY-PASS VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BANDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE SQUARE OPERATING NUTS. BY-PASS VALVE WILL HAVE A HANDWHEEL. PROPERTY OWNER'S VALVE MUST BE LOCATED OUTSIDE OF THE DEPARTMENT OF PUBLIC WORKS METER VAULT.
4. APPROVAL WILL BE NEEDED IF HEIGHT OF VAULT EXCEEDS 6'-0", METER MUST BE MODIFIED TO READ FROM TOP OF VAULT.
5. HATCH OPENING WILL BE 36" x 36" SPRING LOADED.
6. IRON PIPE TAPPING SLEEVE IN STREET RIGHT-OF-WAY SHALL BE IMBEDDED IN PIT SAND MATERIAL AS REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. BACKFILL ABOVE PIT SAND BEDDING AS REQUIRED.
7. DOUBLE HARNESS M.J. WITH TIE RODS. ALL OTHER FITTINGS INSIDE VAULT WILL BE FLANGED.
8. CONTACT THE DEPARTMENT OF PUBLIC WORKS OFFICE PRIOR TO THE INSTALLATION OF COMPOUND METERS FOR PROPER DOMESTIC DEMANDS.
9. NOTCHES WHERE PIPING GOES THROUGH VAULT SHALL BE FILLED WITH MORTAR.
10. TOP OF METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT.
11. CUT OUT 2" HOLE AND MOUNT TOUCH READ PIT LID (TRPL) AND 520 M RADIO READ TRANSMITTER TO SENSUS METER.
12. ALL VALVES SHALL OPEN LEFT.
13. 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR AGGREGATE SIZE.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 11/8/18 REVISED 7/22/18
	4' METER		
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		
			STANDARD NO. DET-824-13 2 OF 2



PLAN VIEW

DRAIN NOTE:
USE GRAVEL FILL
INSIDE 12" PVC

36" x 36" HATCH
(SPRING LOADED)
CENTERED OVER METER

2" HOLE IN LID WITH TRPL AND
520 M RADIO READ TRANSMITTER

5' X 7'
PRECAST METER VAULT
H-20 LOADING

REMOVABLE
TOP

6" MIN.

3' MIN.
CLEARANCE

6" MIN.
CLEAR.

4"
LEVELING
COURSE
SEE NOTE 13

2' LONG 6" PVC INSIDE
3' LONG 12" PVC.
SEE DRAIN NOTE

FLOW

1' WIDE
CONCRETE
SUPPORT
ELEVATION

PIPE
SUPPORT

1' WIDE
CONCRETE
SUPPORT

No.	NAME	LENGTH
A	OVERALL LENGTH	6'-2 3/4"
B	METER + NIPPLE + FCA	3'-1 1/2"
C	CENTER OF MAINLINE TO OUTSIDE OF BYPASS	1'-5 1/2"
D	CENTERLINE OF MAINLINE TO INSIDE OF VAULT	2'-6"
E	CENTERLINE OF MAINLINE TO INSIDE OF VAULT	2'-6"



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
6" METER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/8/18
REVISED 7/22/18


STANDARD NO.
DET-824-14
1 OF 2

NO.	NAME	LENGTH
1	6" METER	2'-0"**
2	6" FLANGED x PLAIN END	1'-0'
3	6" FLANGED COUPLING ADAPTER	5"
4	6" GATE VALVE SQUARE NUT	10 1/2"
5	6" x 6" x 6" FLANGED TEE	1'-1"
6	PROPERTY OWNER'S 6" GATE VALVE SQUARE NUT	10 1/2"
7	6" FLANGED ELBOW (90°)	
8	6" BY-PASS GATE VALVE WITH HANDWHEEL	10 1/2"
9	6" BY-PASS DUCTILE IRON PIPE	
10	6" FLANGED SPOOL	

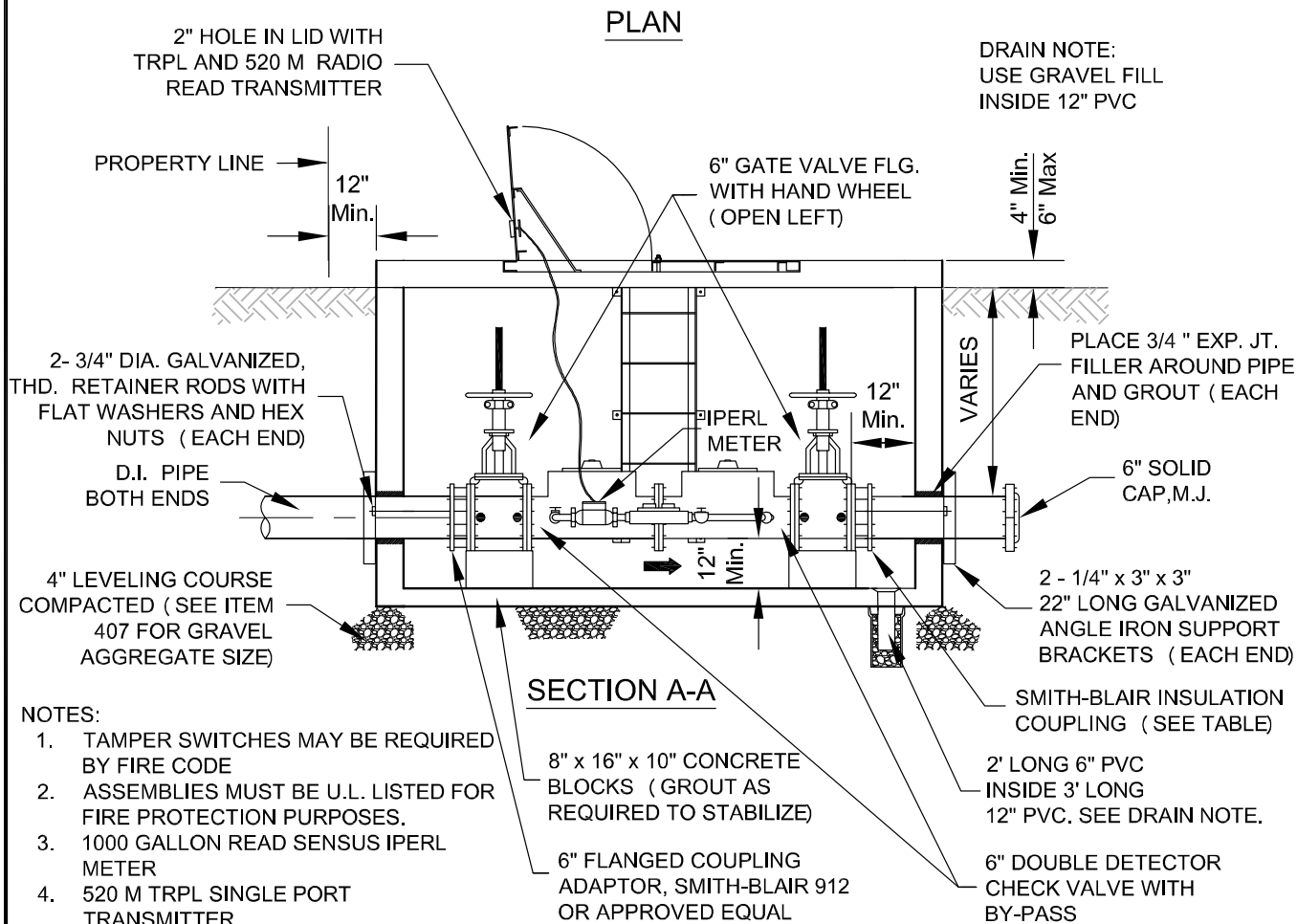
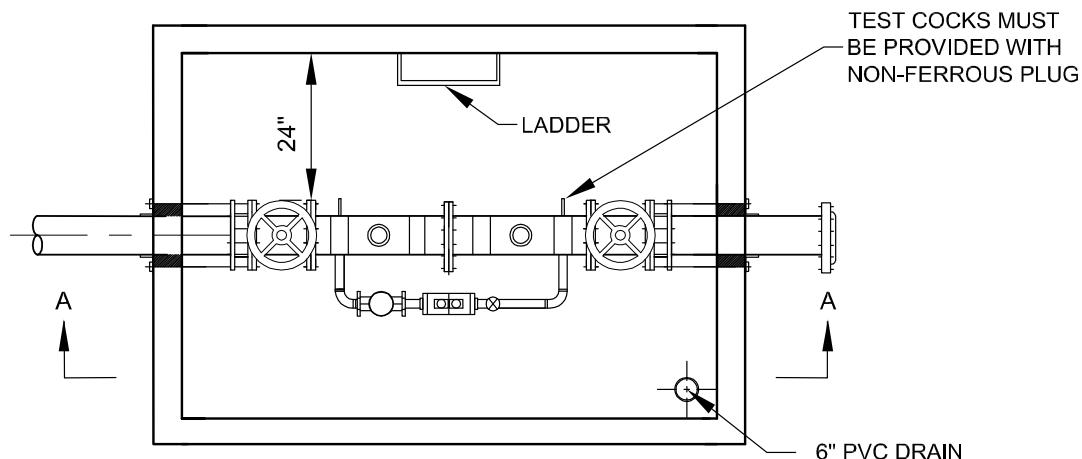
*DIMENSIONS- SUBJECT TO CHANGE, CHECK WITH INSPECTOR

NOTES:

1. PIPE AND METER SIZE SHALL BE AS DETERMINED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. REVIEW AND FIRE DEPARTMENT PLANS MUST BE PREPARED BY LICENSED/REGISTERED ENGINEER. INSTALLATION IS BY DEVELOPER.
2. METER VAULT MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC.
3. MAIN LINE AND BY-PASS VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BANDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE SQUARE OPERATING NUTS. BY-PASS VALVE WILL HAVE A HANDWHEEL. PROPERTY OWNER'S VALVE MUST BE LOCATED OUTSIDE OF THE DEPARTMENT OF PUBLIC WORKS METER VAULT.
4. APPROVAL WILL BE NEEDED IF HEIGHT OF VAULT EXCEEDS 6'-0", METER MUST BE MODIFIED TO READ FROM TOP OF VAULT.
5. HATCH OPENING WILL BE 36" x 36" SPRING LOADED.
6. IRON PIPE TAPPING SLEEVE IN STREET RIGHT-OF-WAY SHALL BE IMBEDDED IN PIT SAND MATERIAL AS REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. BACKFILL ABOVE PIT SAND BEDDING AS REQUIRED.
7. DOUBLE HARNESS M.J. WITH TIE RODS. ALL OTHER FITTINGS INSIDE VAULT WILL BE FLANGED.
8. CONTACT THE DEPARTMENT OF PUBLIC WORKS OFFICE PRIOR TO THE INSTALLATION OF COMPOUND METERS FOR PROPER DOMESTIC DEMANDS.
9. NOTCHES WHERE PIPING GOES THROUGH VAULT SHALL BE FILLED WITH MORTAR.
10. TOP OF METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT.
11. CUT OUT 2" HOLE AND MOUNT TOUCH READ PIT LID (TRPL) AND 520 M RADIO READ TRANSMITTER TO SENSUS METER.
12. ALL VALVES SHALL OPEN LEFT.
13. 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR AGGREGATE SIZE.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	ADOPTED 11/8/18 REVISED 7/22/18 STANDARD NO. DET-824-14 2 OF 2
	6' METER	
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

PIPE DIAMETER	DOUBLE DETECTOR CHECK	BY-PASS METER	SMITH-BLAIR COUPLING
6"	6"	5/8" - 3/4"	1932-6-690
8"	8"	5/8" - 3/4"	932-8-905



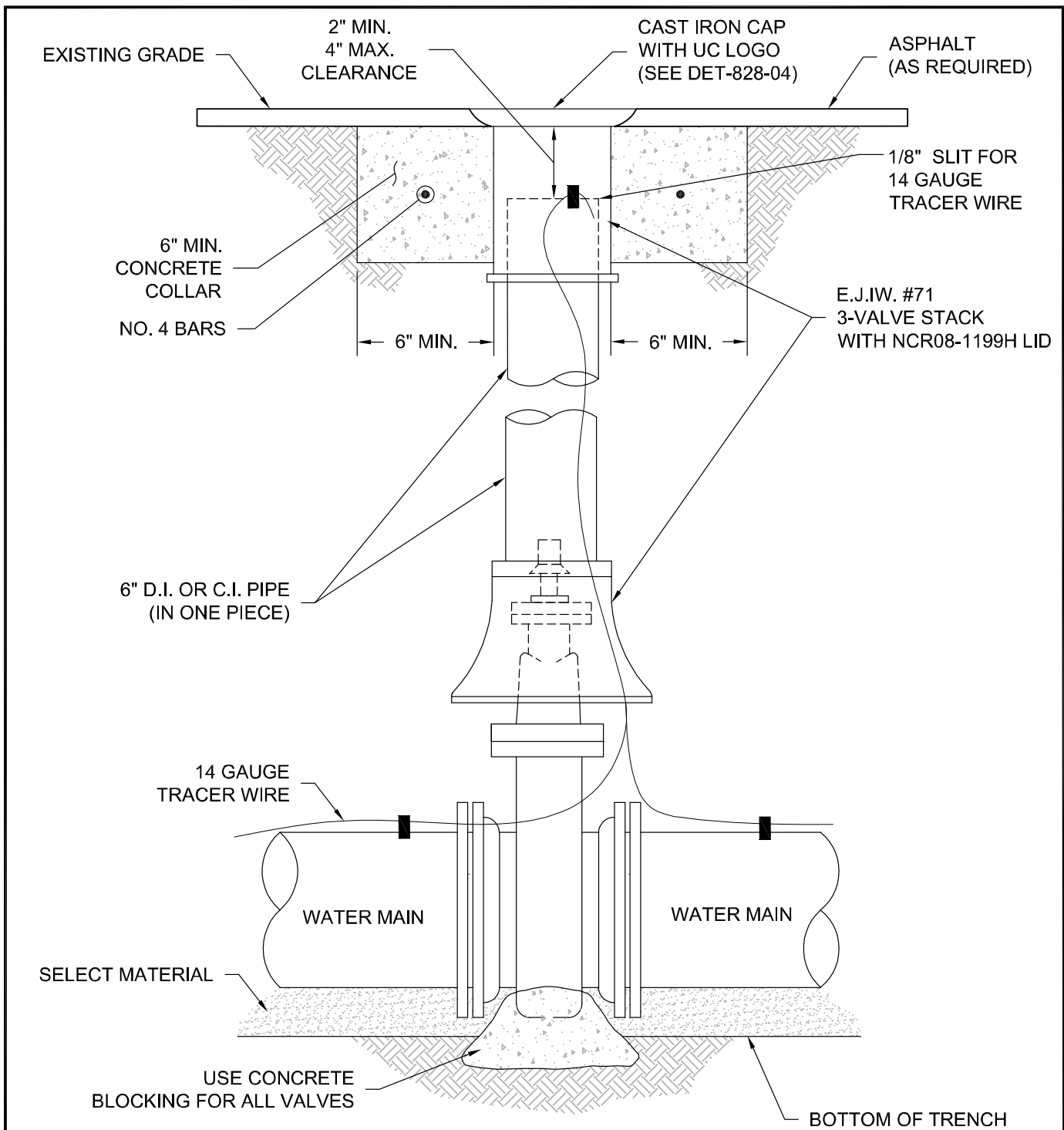
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

6' & 8' DOUBLE CHECK (DCDA) DETECTOR ASSEMBLY INSTALLATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED	8/01/98
REVISED	6/11/15


STANDARD NO.
DET-824-19
1 OF 1

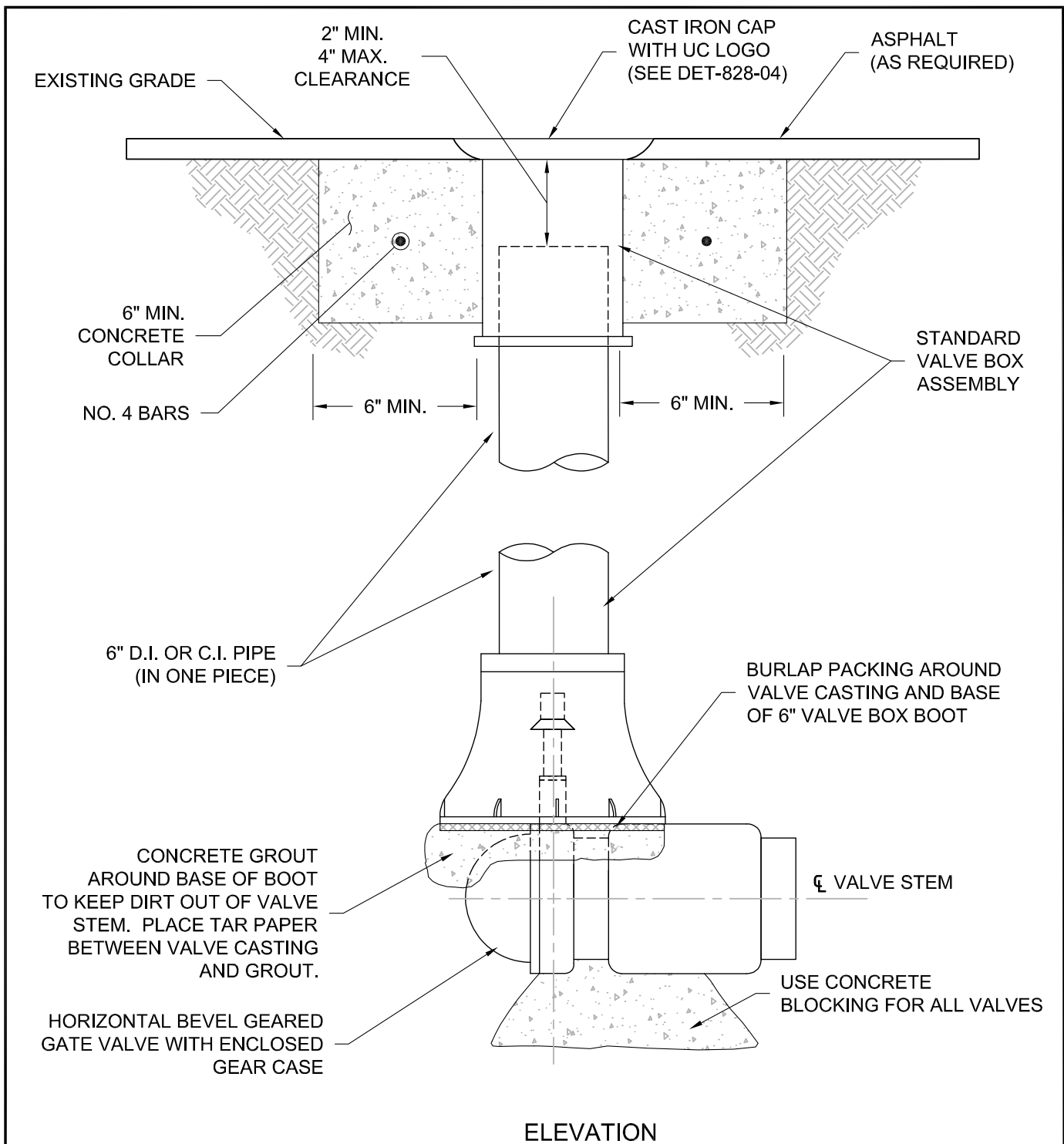


ELEVATION

NOTES:

1. CONCRETE COLLAR TO BE USED WHERE SUBJECT TO VEHICULAR TRAFFIC. CLASS A, 3000 P.S.I. MIN CONCRETE WITH NO. 5 BARS AS SHOWN.
2. VALVE LID SHALL BE PRODUCT NCR08-1199H, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL. HEAVY DUTY RATED FOR H-20 LOADS.

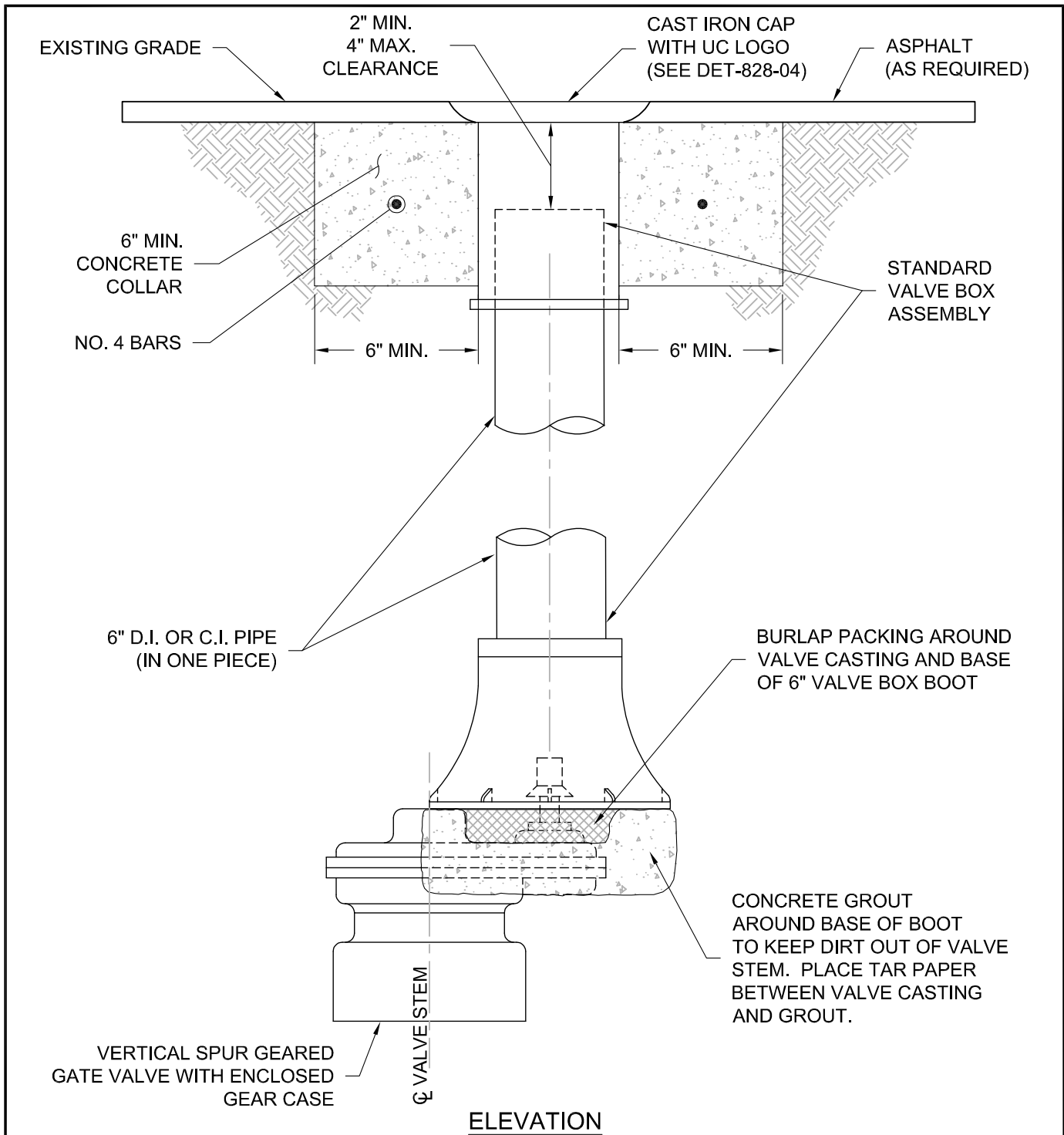
	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 11/18/18 REVISED 7/22/18
	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION		STANDARD NO. DET-828-01
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		1 OF 1
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



NOTES:


1. CONCRETE COLLAR TO BE USED WHERE SUBJECT TO VEHICULAR TRAFFIC. CLASS A, 3000 P.S.I. MIN CONCRETE WITH NO. 5 BARS AS SHOWN.
2. VALVE LID SHALL BE PRODUCT NCR08-1199H, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL. HEAVY DUTY RATED FOR H-20 LOADS.

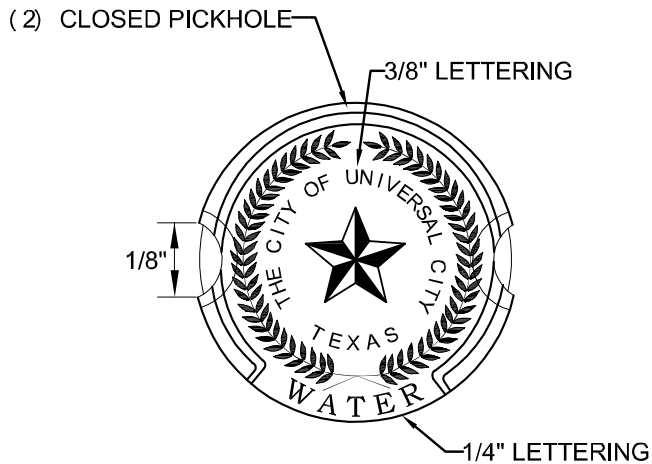
 <p>UNIVERSAL CITY Gateway to Randolph AFB</p>	<p align="center">CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS</p>		<p>ADOPTED 11/18/13 REVISED 7/10/15</p>
	<p align="center">INSTALLATION OF GEARED HORIZONTAL GATE VALVE WITH VALVE BOX COMPLETE</p>		<p>STANDARD NO.</p>
	<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</p>		<p>DET-828-02</p>
	<p>RECORD COPY SIGNED BY RANDY LUHNSMANN, PUBLIC WORKS DIRECTOR.</p>		<p>1 OF 1</p>



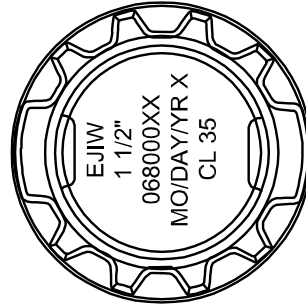
NOTES:

1. CONCRETE COLLAR TO BE USED WHERE SUBJECT TO VEHICULAR TRAFFIC. CLASS A, 3000 P.S.I. MIN CONCRETE WITH NO. 5 BARS AS SHOWN.
2. VALVE LID SHALL BE PRODUCT NCR08-1199H, AS MANUFACTURED BY EAST JORDAN IRON WORKS, OR AN APPROVED EQUAL. HEAVY DUTY RATED FOR H-20 LOADS.

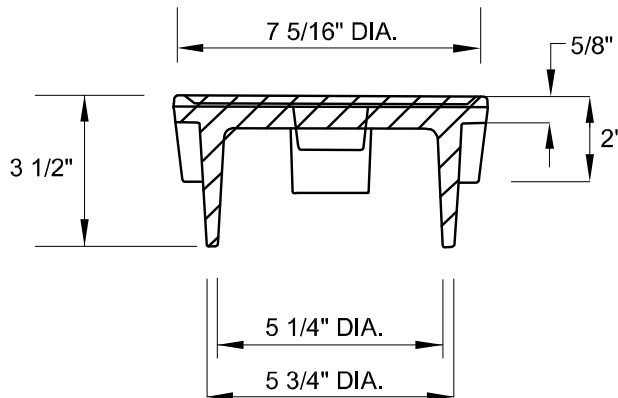
 <p>UNIVERSAL CITY Gateway to Randolph AFB</p>	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 11/18/13 REVISED 7/10/15
	INSTALLATION OF GEARED VERTICAL GATE VALVE WITH VALVE BOX COMPLETE		STANDARD NO. DET-828-03 1 OF 1
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



PLAN VIEW



BOTTOM VIEW

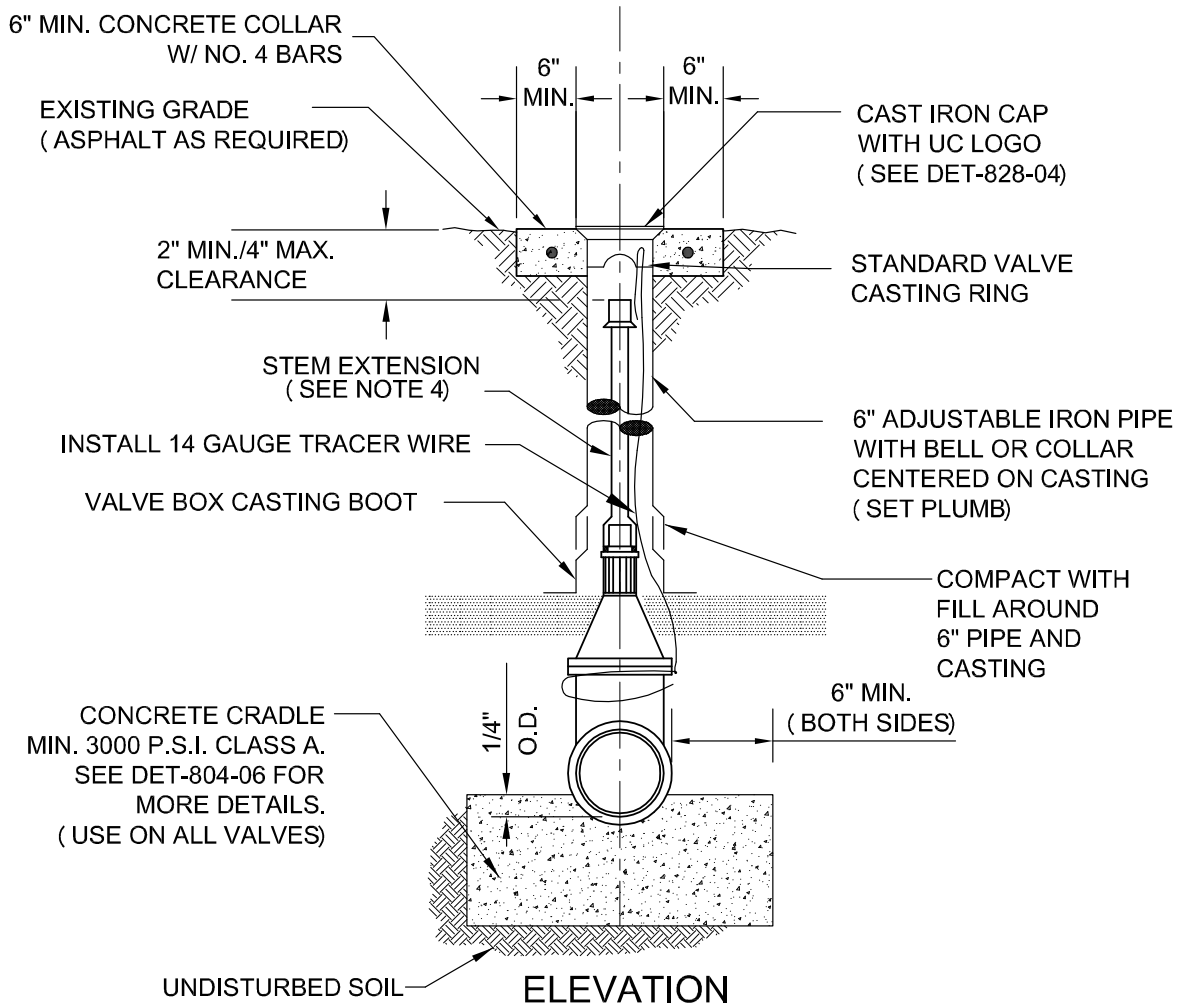


SECTION VIEW

NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, CL 35B; EAST JORDAN IRON WORKS PRODUCT NO. NCR08-1199H, CATALOG NO. 6800.
2. LETTERING SHALL BE 1/4" & 3/8" HEIGHT AND LOCATED AS SHOWN.
3. LID REQUIRES TWO (2) CLOSED PICK HOLE.
4. MANUFACTURER'S IDENTIFICATION CASTING NUMBER AND THE COUNTRY WHERE CAST SHALL BE DISTINCTLY CAST ONTO EACH LID.
5. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
6. FINISH BY REMOVING FINS AND FLASHING. PAINT WITH BLACK ASPHALT COATING.
7. WEIGHT: APPROXIMATELY 14 LBS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/27/16
	VALVE BOX CASTING LID		STANDARD NO. DET-828-04 1 OF 1
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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NOTES:

1. WELD SOCKET 2 1/2" x 2" DEEP TO 1" (SCH. 40) ROUND STEM EXTENSION. FITTED ON OPERATING, SCH. 80 FOR LENGTHS OVER TEN (10) FEET.
2. STANDARD VALVE CASTING RING AND METAL LID IN UNPAVED AREAS.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE TWO (2") INCHES LONG WELDED TO TOP OF ROD.
4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED THREE (3) FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN EIGHTEEN (18") INCHES TO TWENTY-FOUR (24") INCHES FROM THE FINISHED GRADE.



CITY OF UNIVERSAL CITY

DEPARTMENT OF PUBLIC WORKS

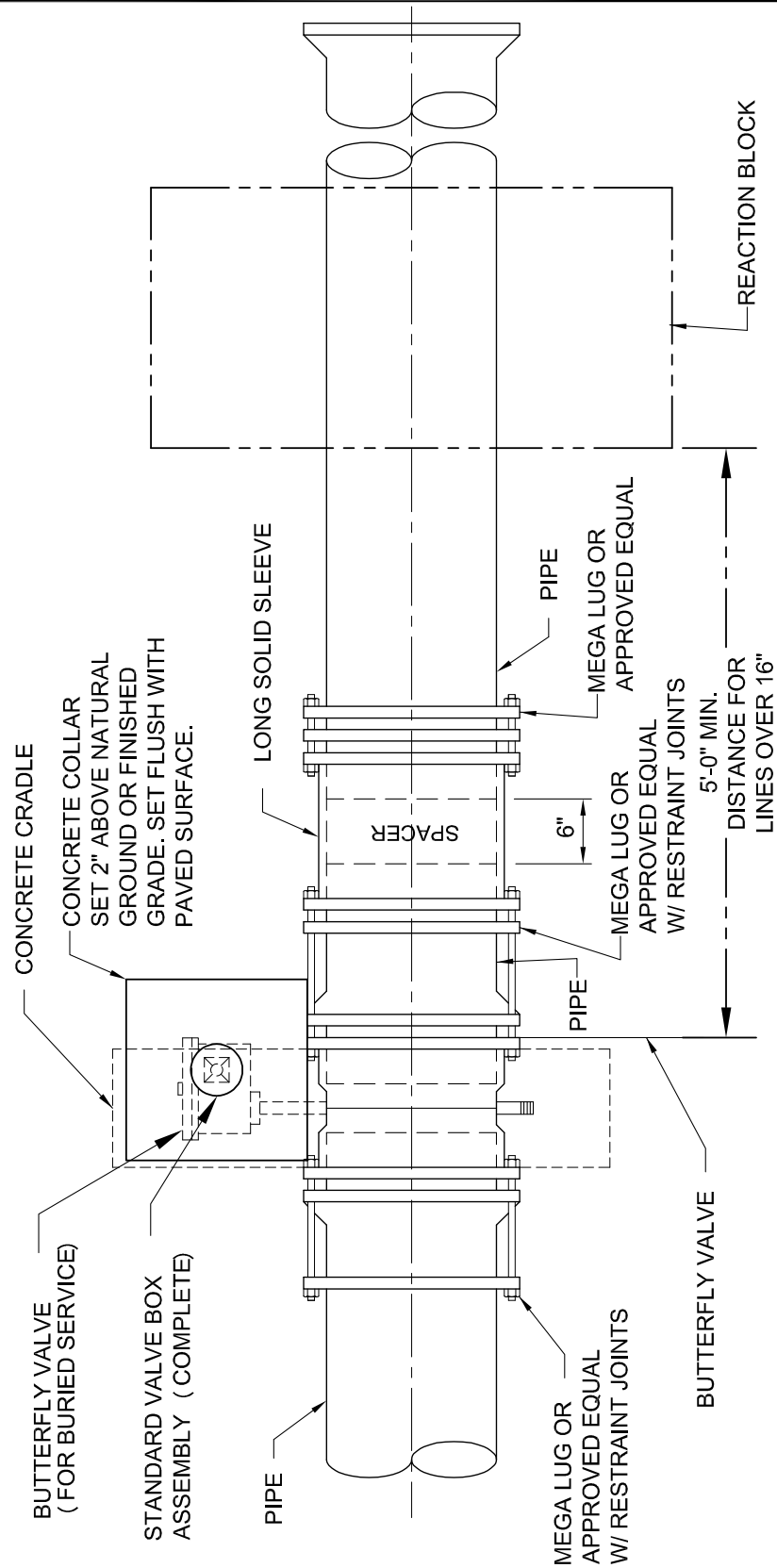
VERTICAL GATE VALVE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

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ADOPTED 8/18/11
REVISED 7/10/15

STANDARD NO.
DET-828-05
1 OF 1



PLAN VIEW



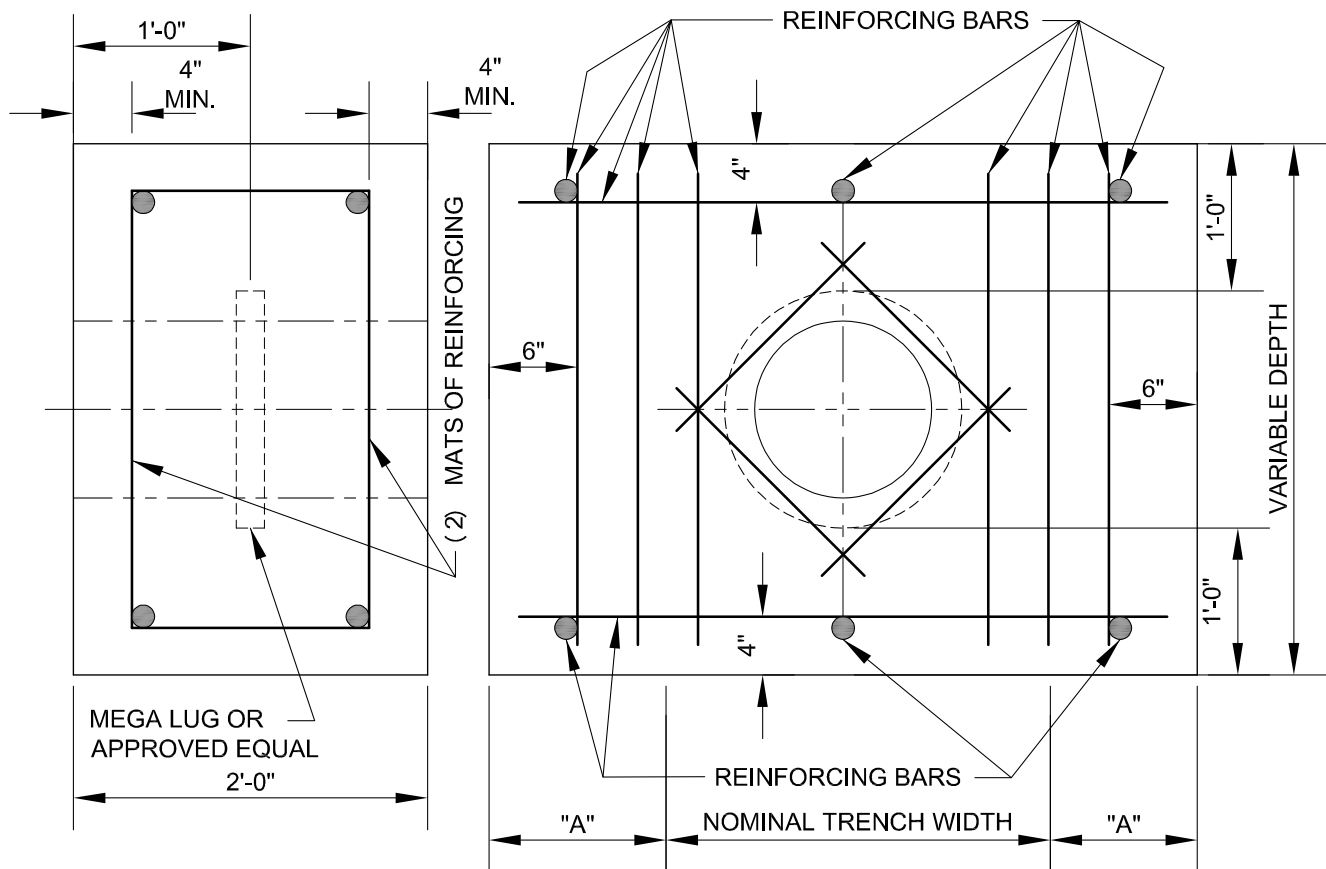
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

BUTTERFLY VALVE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/18/11
REVISED 7/10/15

STANDARD NO.
DET-830-01
1 OF 3



MAIN SIZE	A (MIN.)	REINFORCING BAR SIZE	BEARING SURFACE REQUIRED (IN SQ. FT.)
6"	12"	NO. 4	3
8"	12"	NO. 4	5
12"	18"	NO. 4	8
16"	18"	NO. 4	12
24"	28"	NO. 5	23
30"	36"	NO. 5	35
36"	40"	NO. 5	50
42"	48"	NO. 5	70
48"	52"	NO. 5	95

REACTION BLOCK

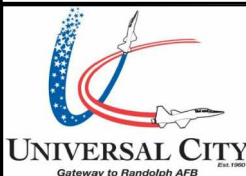
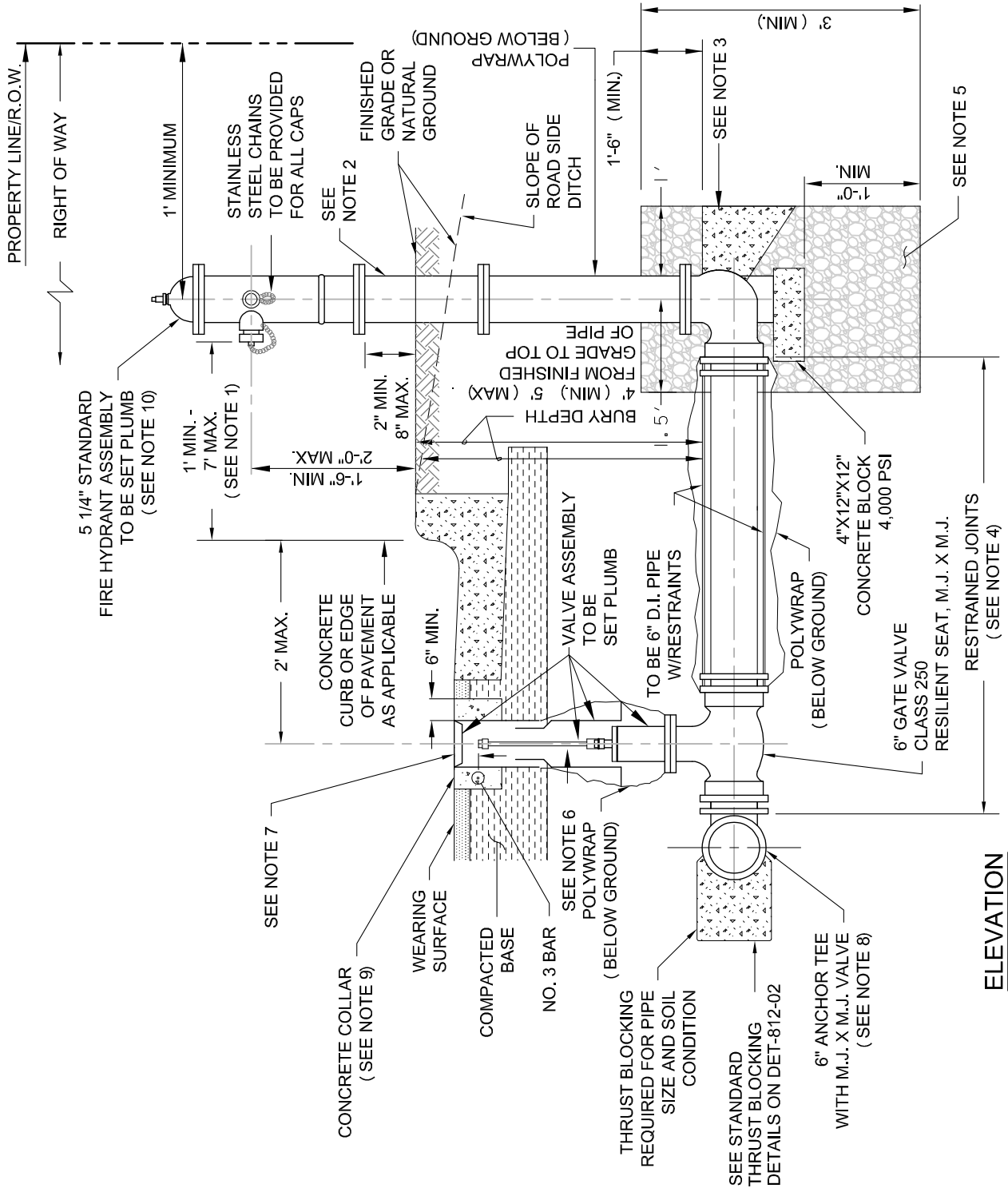


CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS BUTTERFLY VALVE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/18/11
REVISED 7/10/15

STANDARD NO.
DET-830-01
3 OF 3



CITY OF UNIVERSAL CITY

DEPARTMENT OF PUBLIC WORKS

FIRE HYDRANT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

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ADOPTED 8/18/11
REVISED 7/10/18


STANDARD NO.

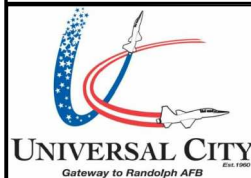
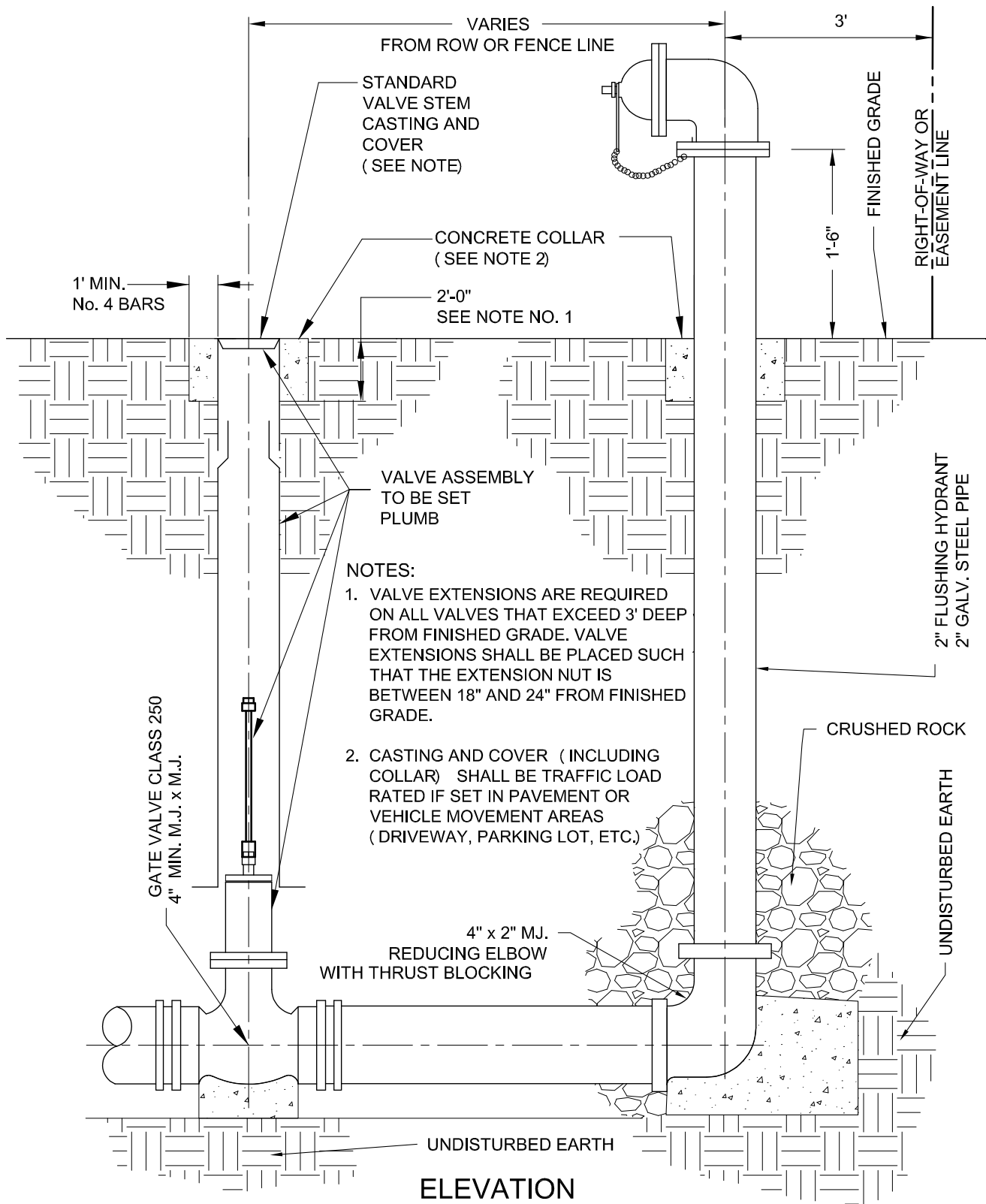
DET-834-01

1 OF 2

NOTES:

1. IN PUBLIC OR COMMERCIAL AREAS WHERE CURBS AND SIDEWALKS EXIST, VALVES SHALL BE PLACED AT LEAST TWO (2) FEET IN FRONT OF THE CURB AND FIRE HYDRANTS SHALL BE A MINIMUM DISTANCE OF THREE (3) TO SIX (6) FEET BEHIND THE CURB OR EDGE OF PAVEMENT, IN AREAS WITHOUT CURBS OR SIDEWALKS, THE FIRE HYDRANT SHALL BE PLACED 3'-6" FROM THE MAIN. THE FIRE HYDRANT MAY BE SET NEXT TO THE PROPERTY LINE TO AVOID CONFLICTS WITH SIDEWALKS OR RAMPS, PROVIDED THE MAXIMUM DISTANCES FROM THE STREET OR CURB FACE ARE ACCOUNTED FOR.
2. ONE BARREL EXTENSION, NOT EXCEEDING TWO (2) FEET LENGTH, SHALL BE ALLOWED TO BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF FOUR TO FIVE (4' - 5') FEET. BREAKAWAY BOLTS (SHOE TYPE) SHALL BE PROPERLY SPACED AND PLACED WHEN EXTENSIONS ARE NEEDED TO ACCOMMODATE THE FIRE HYDRANTS.
3. CONCRETE BLOCKING WITH A MINIMUM OF TWO (2) FEET BEARING AREA, 4,000 P.S.I. CONCRETE. DO NOT BLOCK DRAIN HOLES (BITUMINOUS FELT PAPER BETWEEN FIRE HYDRANT AND THE CONCRETE.
4. FIRE LINE SHALL HAVE RESTRAINT JOINT FROM THE MAIN TO THE HYDRANT.
5. CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND THE BOTTOM OF THE FIRE HYDRANT FOR A RADIUS OF AT LEAST 1'-6" AND EXTEND AT LEAST 1'-6" ABOVE THE DRAIN OUTLET. DO NOT BLOCK DRAIN HOLES (MUST BE ABLE TO DRAIN) .
6. WELD SOCKET (2 1/2" x 2") TO 1" SCHEDULE 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT. USE SCHEDULE 80 ROUND STEM EXTENSIONS FOR LENGTHS OVER TEN (10) FEET. VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE, OF REQUIRED LENGTH, WITH A SOCKET ON ONE END AND A NUT ON THE OTHER.
7. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED THREE (3) FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN EIGHTEEN (18") AND TWENTY-FOUR (24") INCHES FROM FINISHED GRADE.
8. VALVE, DUCTILE IRON PIPE AND FIRE HYDRANT SYSTEM SHALL BE RESTRAINT JOINT CONTINUOUSLY TOGETHER.
9. CONCRETE COLLAR AND VALVE COVER SHALL BE TRAFFIC LOAD RATED IN TRAFFIC OR VEHICLE MOVEMENT AREAS (DRIVEWAYS, PARKING LOTS, ETC.) . CONCRETE COLLARS SHALL BE ON ALL VALVE SETTINGS.
10. FIRE HYDRANT MUST HAVE A CLEARANCE OF THREE (3) FEET ALL AROUND THE FIRE HYDRANT. FOR HIGHWAY INSTALLATION SEE TxDOT SPECIFICATIONS. INSTALL SIX (6") INCH STEEL PIPE GUARD POST (WITH SAFETY YELLOW PAINT) AS REQUIRED TO PROTECT FIRE HYDRANT FROM VEHICULAR TRAFFIC.
11. WHEN A FIRE HYDRANT IS INSTALLED AT A CUL-DE-SAC, IT SHALL BE PLACED A MINIMUM OF EIGHT (8") INCHES AND MAXIMUM OF SIX (6) FEET FROM THE BACK OF THE CURB. THE GATE VALVE SHALL BE TWO (2) FEET MINIMUM FROM THE BACK OF THE CURB TO THE FACE OF THE GATE VALVE, INSTALLED IN THE STREET, ANCHOR WITH REACTION BLOCK BEFORE THE ASSEMBLY.
12. WRAP 8 MIL POLYWRAP ON ALL BURIED PIPE AND FITTINGS.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 7/10/18
	FIRE HYDRANT		
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		STANDARD NO. DET-834-01 2 OF 2
	RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.		



CITY OF UNIVERSAL CITY

DEPARTMENT OF PUBLIC WORKS

BLOW-OFF HYDRANT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

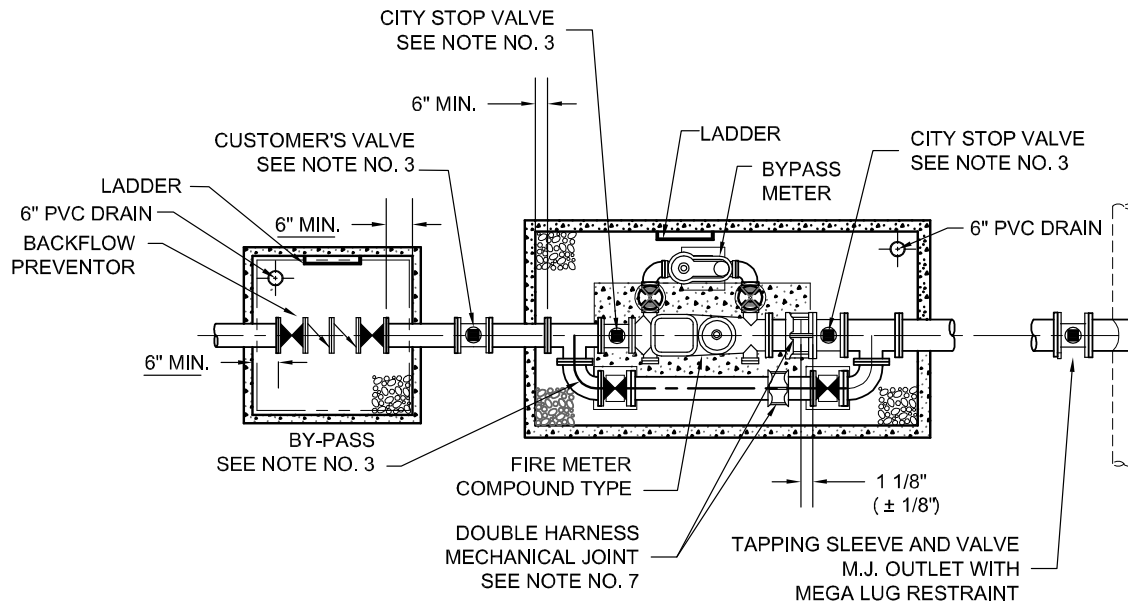
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ADOPTED 8/18/11
REVISED 7/10/11

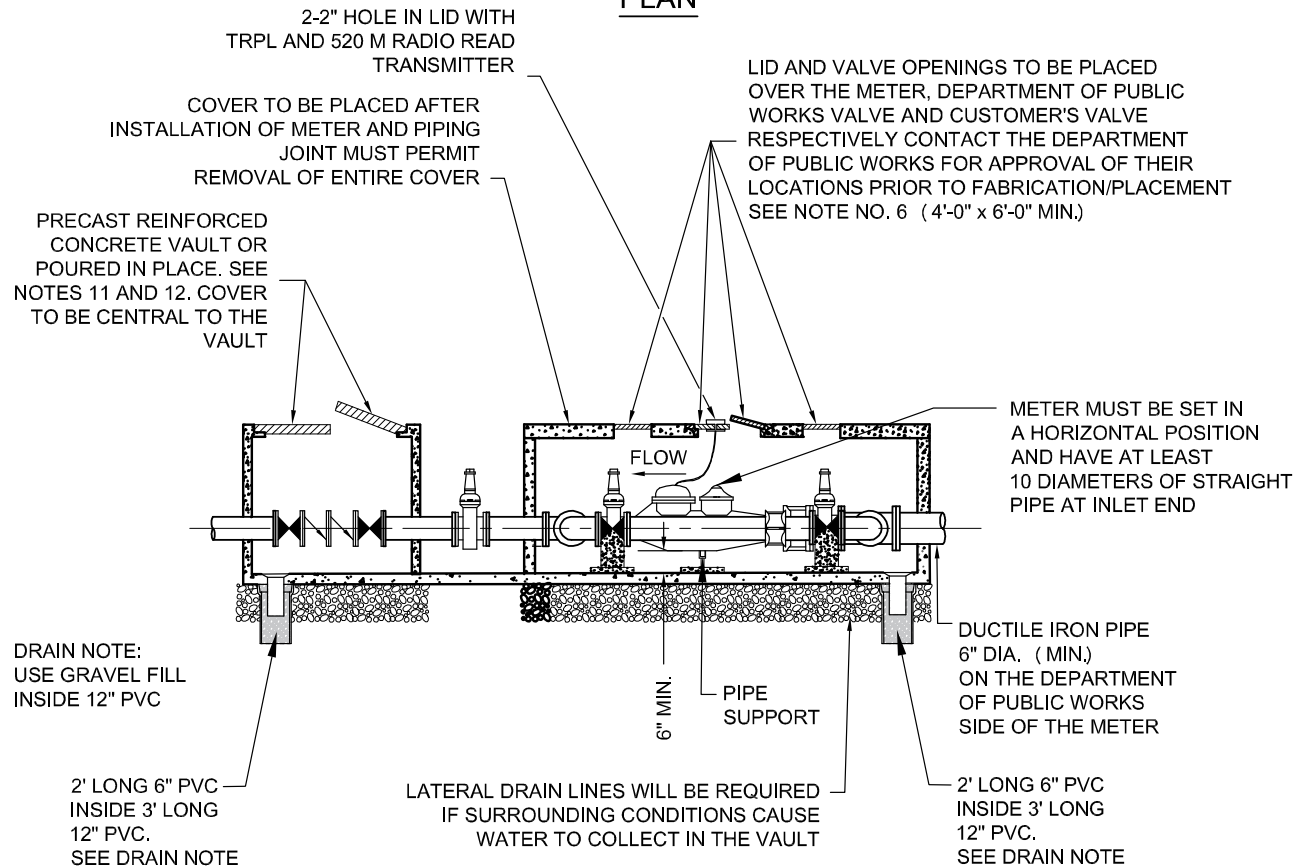
STANDARD NO.

DET-834-02

1 OF 1



PLAN



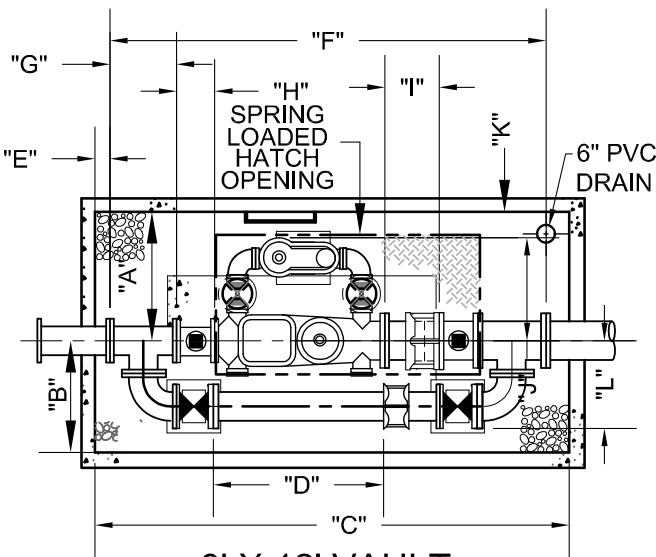
ELEVATION



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
FIRE LINE METER INSTALLATION	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
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ADOPTED 8/18/11
REVISED 7/22/15

STANDARD NO.
DET-834-03
 1 OF 3



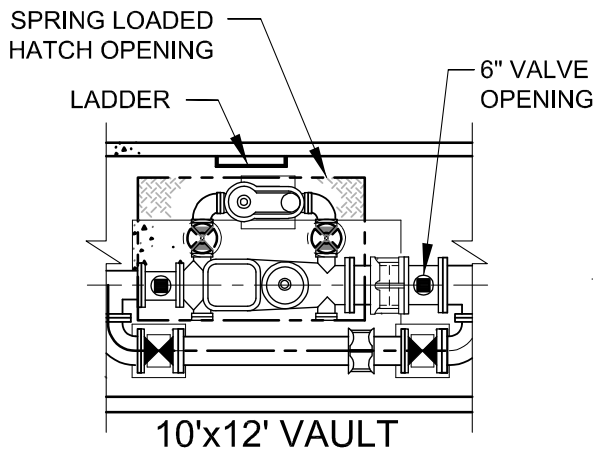
8' X 12' VAULT
LOCATION OF 4'x6'
HATCH OPENING
FOR 6" x 3"x 3/4" METER

METER AND BOX DIMENSIONS (INCHES)

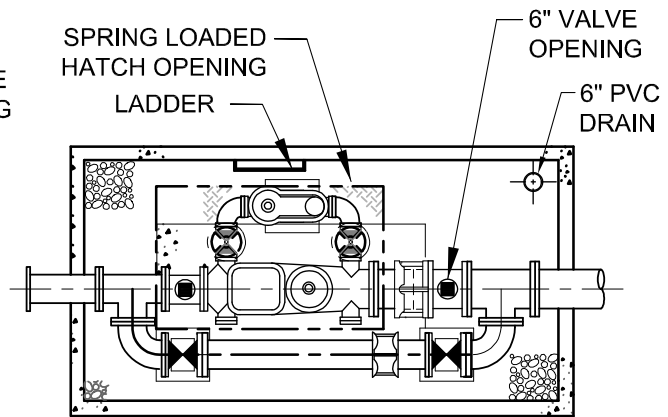
WATER METER	A	B	C	D	E	F
6" x 3"	60	36	144	45	15	114
8" x 4"	72	48	144	53	8	127
10" x 10" x 6"	72	48	180	68	13	154
10" x 12" x 6"	72	48	180	68	10	160

WATER METER	G	H	I	J	K	L
6" x 3"	16	10 1/2	13	27	33	22
8" x 4"	18	11 1/2	13	33	39	25
10" x 10" x 6"	22	13	13	42	30	30
10" x 12" x 6"	24	14	13	42	30	34

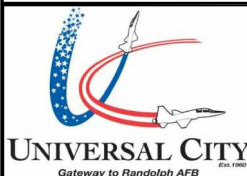
WATER METER	SIZE OF BY-PASS	BY-PASS VALVE W/HANDWHEEL	MAIN LINE VALVE WITH SQUARE OPERATING NUT
6" x 3"	6"	6"	6"
8" x 4"	8"	8"	8"
10"x10"x6"	10"	10"	10"
10"x12"x6"	12"	12"	12"



10'x12' VAULT
LOCATION OF 4'x6'
HATCH OPENING
FOR 8" x 4" x 1" METER



15' x 10' VAULT
LOCATION OF 4'x6'
HATCH OPENING
FOR 10" x 10" x 6" x 1 1/2 "



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS
FIRE LINE METER INSTALLATION
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 8/18/11
REVISED 7/22/15

STANDARD NO.
DET-834-03
2 OF 3

MINIMUM NUMBER OF TIE RODS


PIPE SIZE, inches	Working Pressure, psi (a)					
	50	75	100	125	150	200
3, 4, 6	2	2	2	2	2	2
8	2	2	2	2	4	4
10	2	2	4	4	4	6
12	2	4	4	4	6	6
14	2	4	4	6	8	10
16	4	4	6	8	8	12
18	4	6	8	10	10	(b)

PIPE SIZE, inches	Working Pressure, psi (a)					
	50	75	100	125	150	200
20	4	6	8	10	12	(b)
24	6	10	12	16	(b)	(b)
30	6	8	10	12	14	18
36	8	10	14	16	20	(b)
42	6	8	12	14	16	(22)
48	8	10	14	18	20	(28)

- a. BASED UPON TEST PRESSURE NOT MORE THAN 50% HIGHER THAN WORKING PRESSURE.
b. REQUIRED NUMBER EXCEEDS NUMBER OF HOLES IN STANDARD MECHANICAL JOINT. USE OTHER METHODS OF HARNESSING.

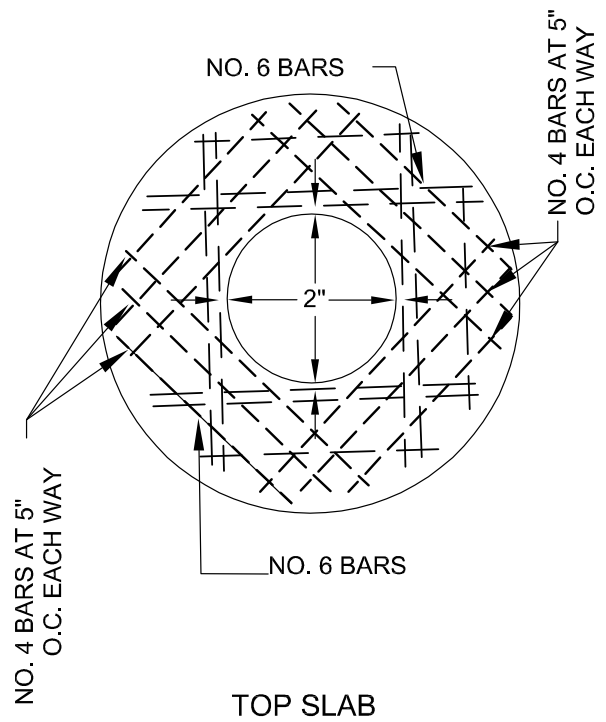
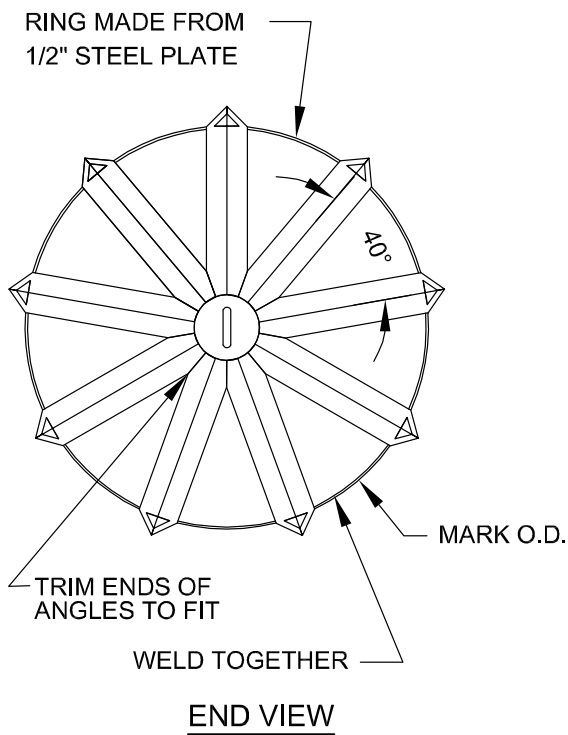
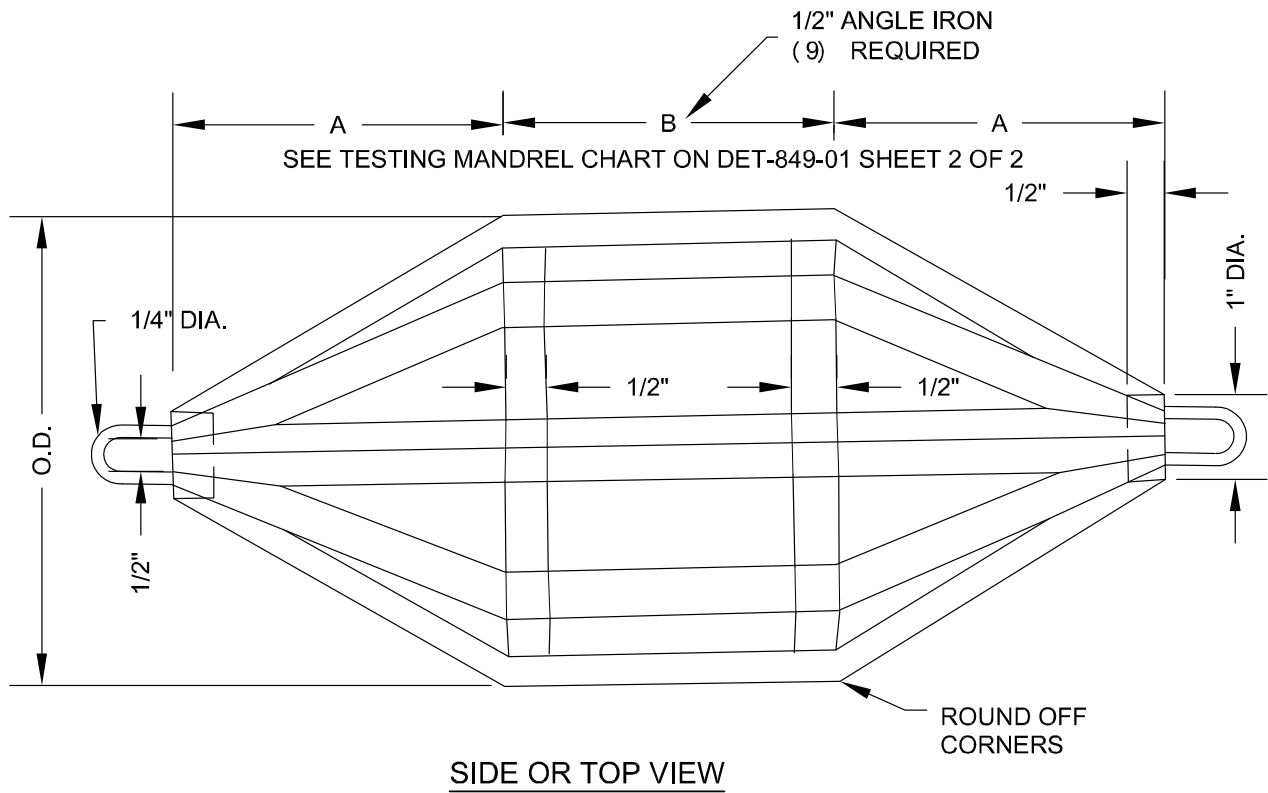
NOTES:

- PIPE AND METER SIZE SHALL BE AS DETERMINED BY OWNER; APPROVAL BY DEPARTMENT OF PUBLIC WORKS AND FIRE DEPARTMENT. PLANS MUST BE PREPARED BY LICENSED/REGISTERED ENGINEER. INSTALLATION IS BY DEVELOPER.
- METER VAULT MUST BE BEHIND CURB AND/OR WALK AND OUT OF VEHICULAR TRAFFIC.
- MAIN LINE AND BYPASS VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BANDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE SQUARE OPERATING NUTS. BYPASS VALVE WILL HAVE A HANDWHEEL. CUSTOMER'S VALVE MUST BE LOCATED OUTSIDE OF THE DEPARTMENT OF PUBLIC WORKS METER VAULT.
- APPROVAL WILL BE NEEDED IF HEIGHT OF VAULT EXCEEDS 72", METER MUST BE MODIFIED TO READ FROM TOP OF VAULT.
- HATCH OPENING WILL BE 4'x6' DOUBLE LEAF SPRING LOADED. (H-20 LOADING REQUIRED) .
- IRON PIPE TAPPING SLEEVE IN STREET RIGHT-OF-WAY SHALL BE IMBEDDED IN PIT SAND MATERIAL AS REQUIRED BY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND FLOWABLE FILL ABOVE AS REQUIRED.
- DOUBLE HARNESS MJ WITH TIE RODS. ALL OTHER FITTINGS INSIDE VAULT WILL BE FLANGED.
- IF METER VAULT IS TO BE POURED IN PLACE OR PRECAST (IF AVAILABLE IN THE PROPER SIZE) , CONSTRUCTION PLANS MUST BE PREPARED BY REGISTERED PROFESSIONAL ENGINEER. (H-20 LOADING REQUIRED) .
- NOTCHES WHERE PIPING GOES THROUGH VAULT SHALL BE FILLED WITH MORTAR.
- THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT.
- BACKFLOW CONFIGURATION AND LENGTH/WIDTH MAY VARY DUE TO BRAND. VERIFY DIMENSIONS TO DETERMINE MINIMUM SIZE OF VAULT.
- VAULT SHALL BE SIZED AS NEEDED FOR A MINIMUM CLEARANCE AS SHOWN. VAULT SHALL BE RATED FOR H-20 LOADING. SUBMIT SHOP DRAWINGS TO PROJECT ENGINEER FOR REVIEW.
- 4" LEVELING COURSE COMPACTED. SEE ITEM 407 FOR AGGREGATE SIZE.
- CUT OUT 2" HOLE AND MOUNT TOUCH READ PIT LID (TRPL) AND 520 M RADIO READ TRANSMITTER TO SENSUS METER.

	CITY OF UNIVERSAL CITY		ADOPTED 8/18/11 REVISED 7/22/15
	DEPARTMENT OF PUBLIC WORKS		
	FIRE LINE METER INSTALLATION		
	STANDARD NO. DET-834-03 3 OF 3		
<small>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</small> <small>RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.</small>			

Sewer Details

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CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
MANDREL TESTING

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 8/18/11
REVISED 9/22/15

STANDARD NO.
DET-849-01
1 OF 2

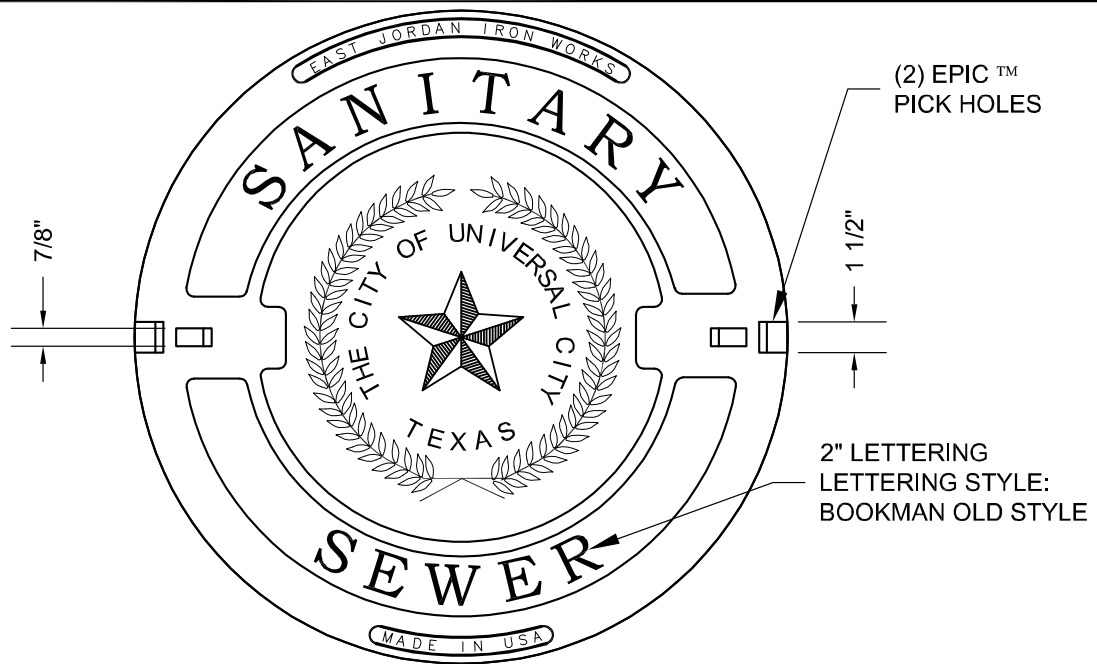
PIPE SIZE & MANDREL DIMENSIONS			MANDREL O.D.				RING O.D.			
SIZE	A	B	PVC (SDR-41)	PVC (SDR-35)	PVC (SDR-26)	LARGE DIA. RIBBED	PVC (SDR-41)	PVC (SDR-35)	PVC (SDR-26)	LARGE DIA. RIBBED
6"	4"	4.5"	5.67"	5.62"	5.50"	-	4.96"	4.91"	4.79"	-
8"	5.5"	6"	7.59"	7.52"	7.37"	-	6.88"	6.81"	6.66"	-
10"	7"	7.5"	9.49"	9.41"	9.21"	-	8.78"	8.70"	8.50"	-
12"	8"	9"	11.30"	11.19"	10.96"	-	10.59"	10.48"	10.25"	-
15"	10"	11"	13.82"	13.70"	13.42"	-	13.11"	12.99"	12.71"	-
18"	12"	13.5"	-	16.82"	-	16.72"	-	16.11"	-	16.01"
21"	14"	16"	-	19.83"	-	19.66"	-	19.12"	-	18.95"
24"	16"	18"	-	22.31"	-	22.26"	-	21.60"	-	21.55"
27"	18"	20"	-	25.14"	-	25.10"	-	24.43"	-	24.39"
30"	20"	22.5"	-	-	-	27.94"	-	-	-	27.23"
36"	24"	27"	-	-	-	33.63"	-	-	-	32.92"
40"	26.8"	30"	-	-	-	37.41"	-	-	-	36.70"
48"	32"	36"	-	-	-	44.99"	-	-	-	44.28"

CHART

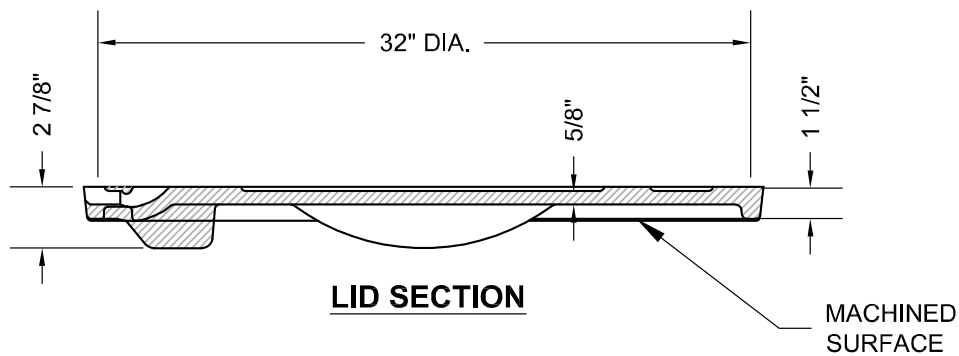
NOTES:

1. PVC PIPES AND FITTINGS 6" TO 15" DIAMETER SHALL CONFORM TO ASTM D3034.
2. PVC PIPES AND FITTINGS 18" TO 48" DIAMETER SHALL CONFORM TO ASTM F679.
3. AFTER CONSTRUCTION IS COMPLETED, TRUE OUTSIDE DIAMETER DIMENSION FOR THE FULL LENGTH OF B TO 0.010 INCH BY TOOL AND LATHE OR GRINDING.
4. THIS INFORMATION IS PROVIDED AS A REFERENCE, ALL DEFLECTION SHALL BE DONE IN ACCORDANCE WITH TCEQ.

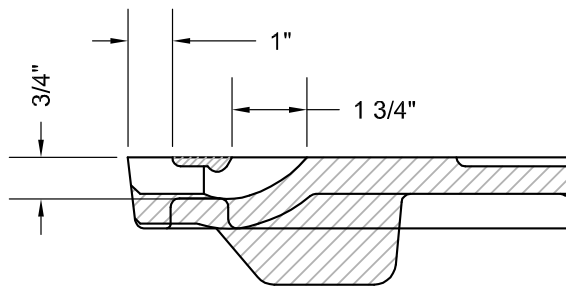
	CITY OF UNIVERSAL CITY	ADOPTED 8/18/11 REVISED 9/22/15 STANDARD NO. DET-849-01 2 OF 2
	DEPARTMENT OF PUBLIC WORKS	
	MANDREL TESTING	
	<small>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</small> <small>RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.</small>	



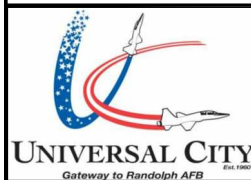
PLAN VIEW



LID SECTION



PICK HOLE DETAIL

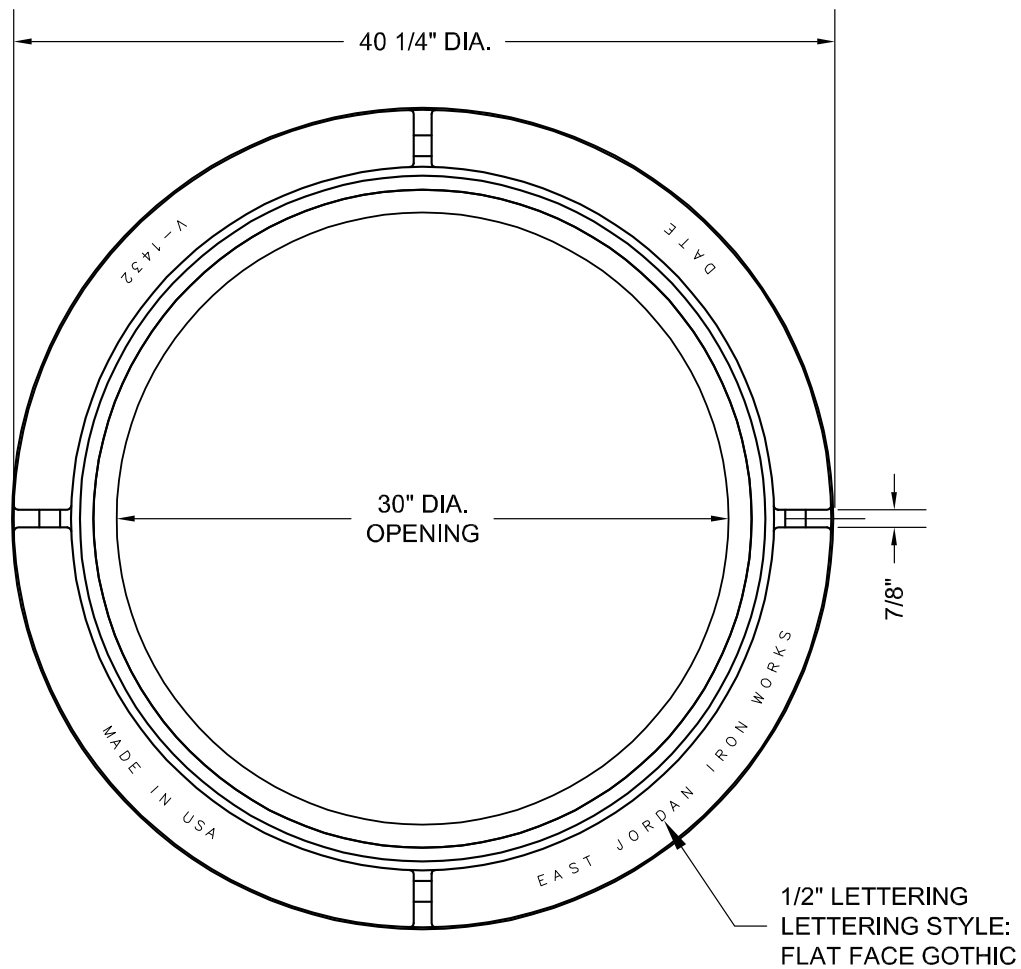


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
MANHOLE COVER

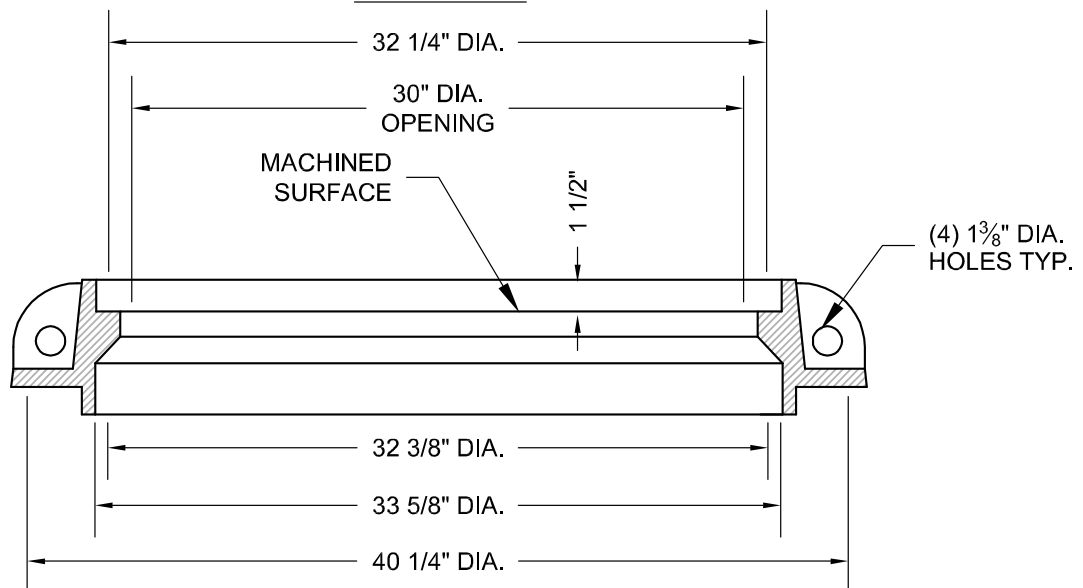
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 11/1/13
REVISED 9/11/15

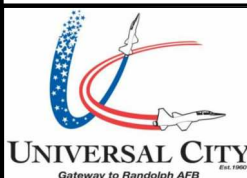
STANDARD NO.
DET-852-01
1 OF 2



PLAN VIEW



FRAME SECTION



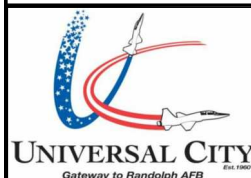
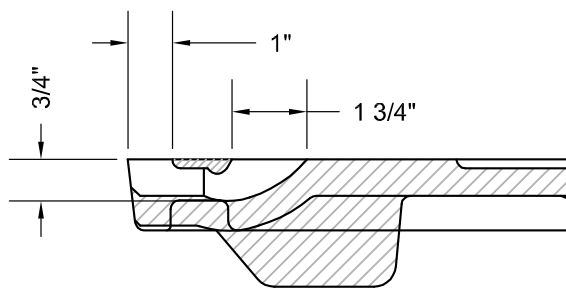
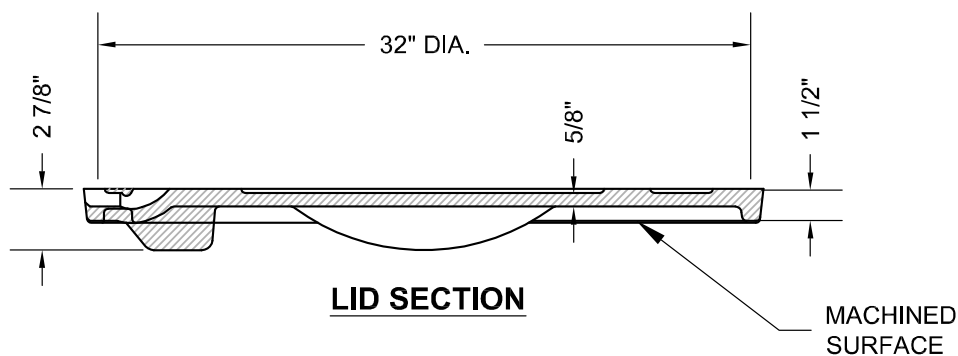
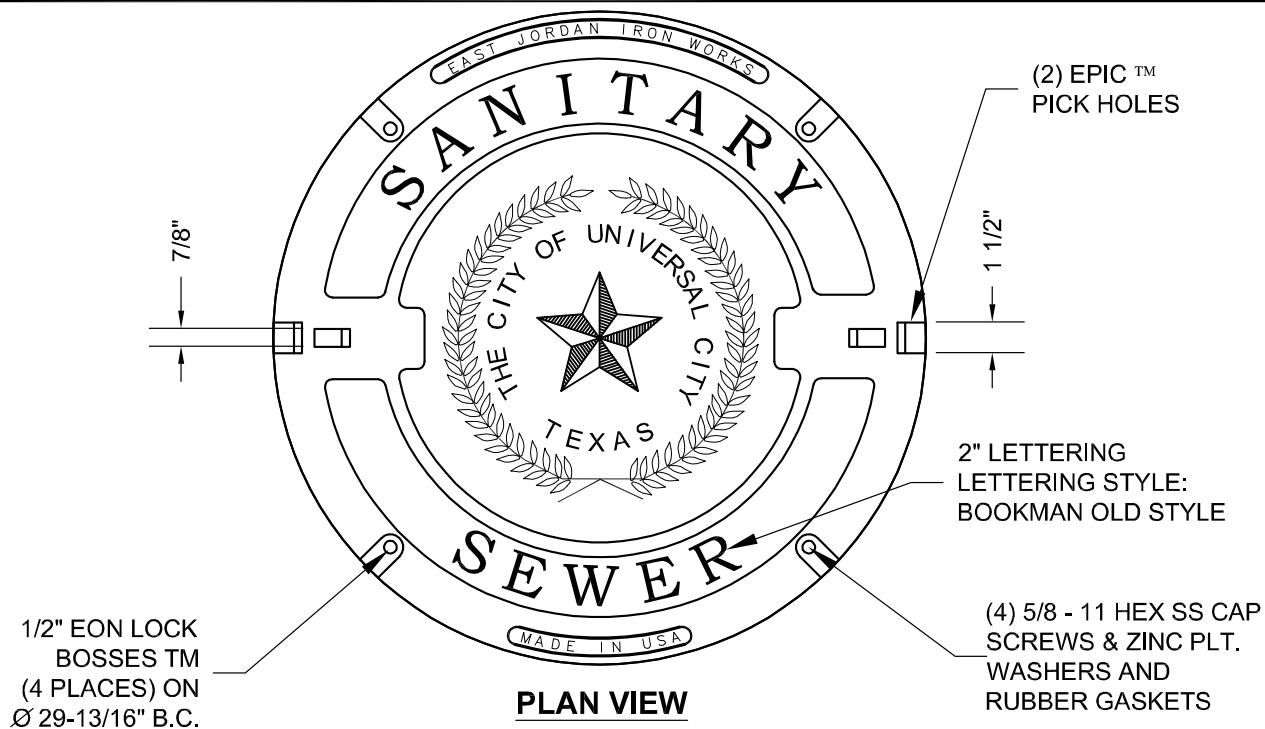
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

MANHOLE COVER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 11/1/13
REVISED 9/11/15

STANDARD NO.
DET-852-01
2 OF 2

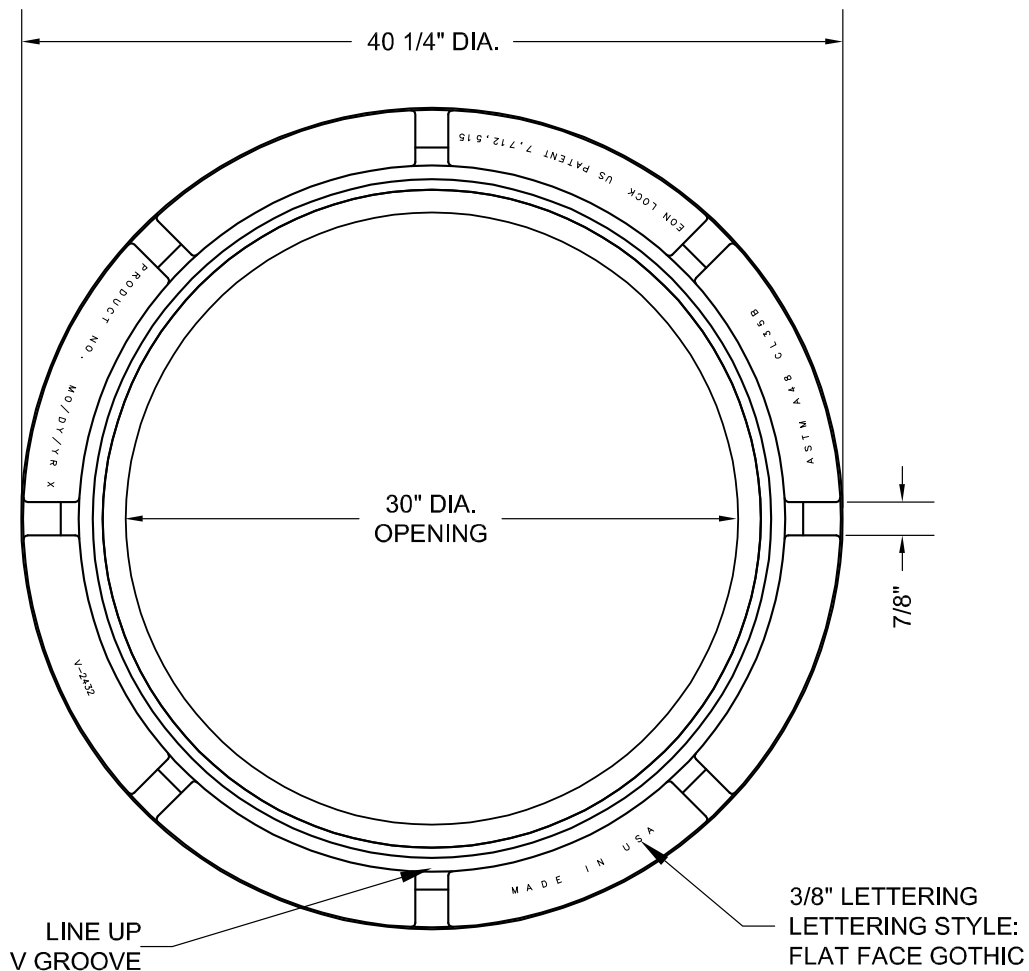


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
BOLTED MANHOLE COVER

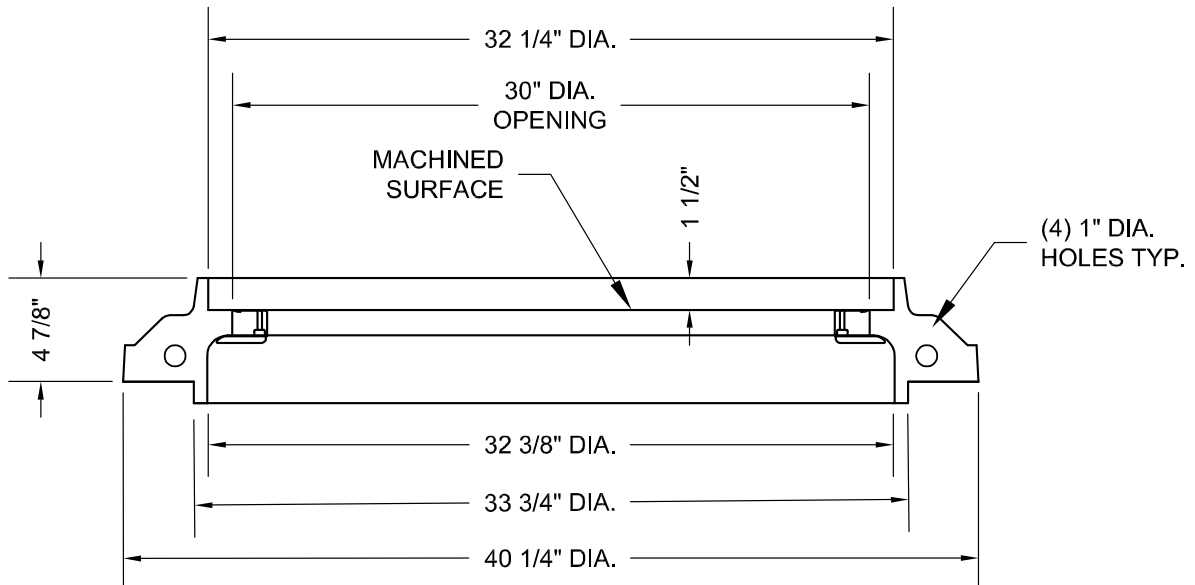
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/1/13
REVISED 9/11/16

STANDARD NO.
DET-852-02
1 OF 2



PLAN VIEW



FRAME SECTION

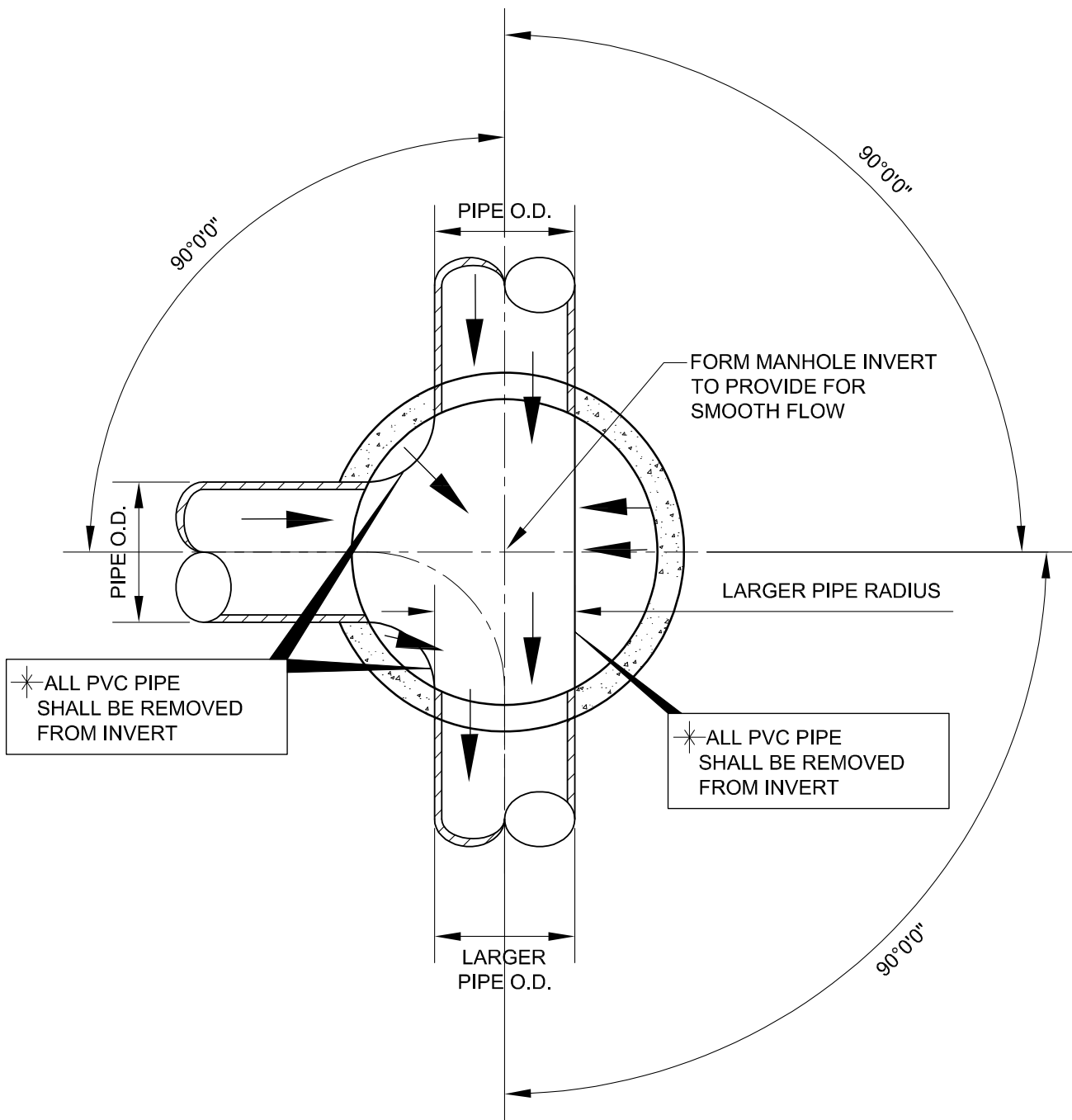


CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS BOLTED MANHOLE COVER

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/1/13
REVISED 9/11/16

STANDARD NO.
DET-852-02
2 OF 2



FLOW OF MANHOLE AT INTERSECTION
WITH LARGER OUTLET PIPE

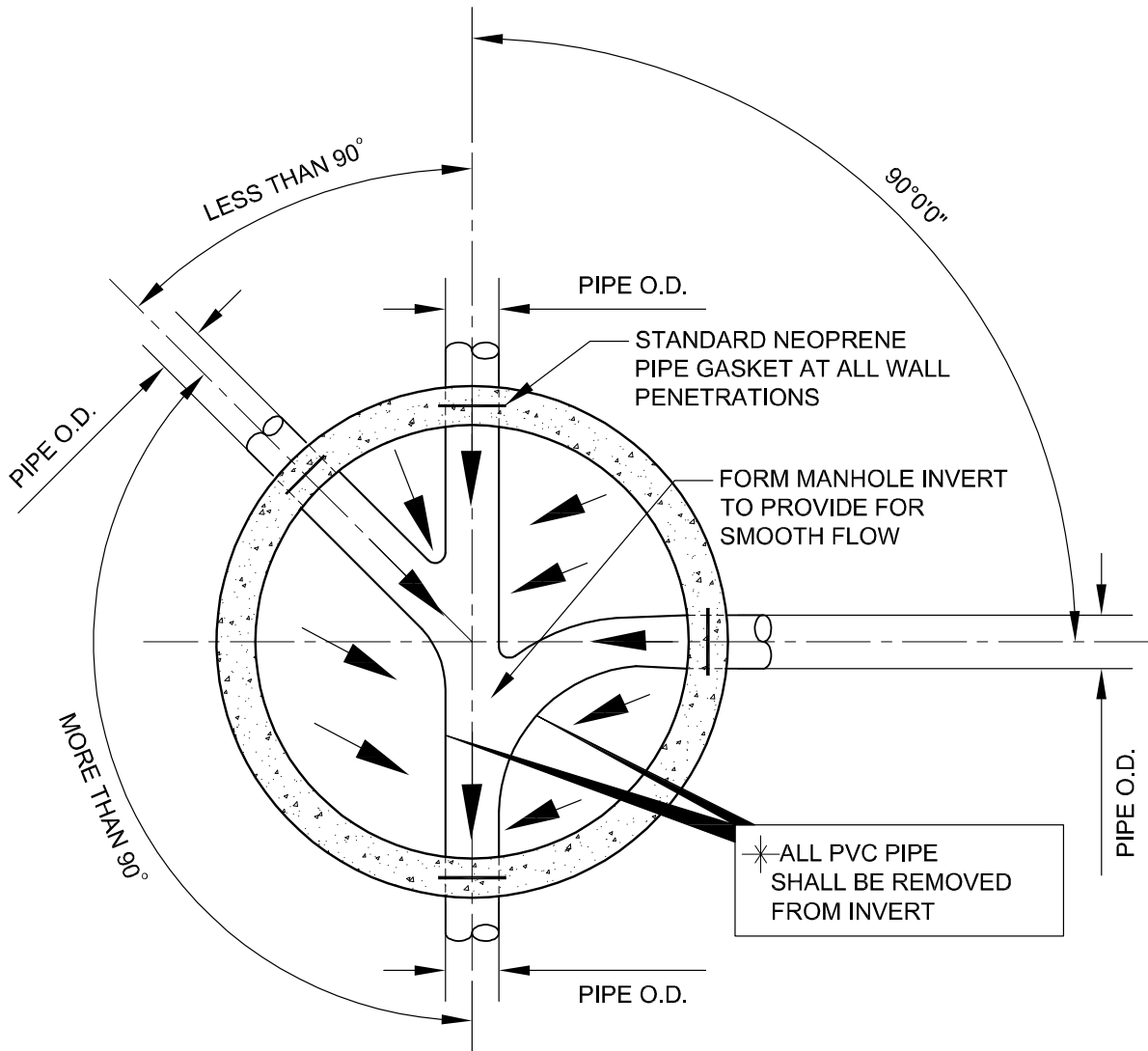


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
MANHOLE INVERT PLAN

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUINSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/1/13
REVISED 6/15/15

STANDARD NO.
DET-852-03
1 OF 3



FLOW OF MANHOLE STRAIGHT THRU WITH INTERSECTIONS

NOTES:

1. MANHOLES SHALL BE GROUTED TO FLOW. SIDE SLOPES TO BE 10% GRADE.
2. PIPES SHALL NOT PROTRUDE MORE THAN TWO (2") INCHES INSIDE OF MANHOLE SECTION. CONSTRUCT WATER TIGHT CONNECTION TO MANHOLE.
3. ALL PIPES ENTERING MANHOLE MUST BE FULLY SUPPORTED BY EITHER CONCRETE CRADLE OR COMPACTED GRANULAR BEDDING MATERIAL.
4. PROVIDE PIPE JOINT 2'-0" MINIMUM OUTSIDE OF MANHOLE WALL.
5. CONTRACTOR TO USE NON-SHRINK GROUT. FILLET JUNCTION OF BENCH AND SIDEWALL WITH NON-SHRINK CONCRETE GROUT.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

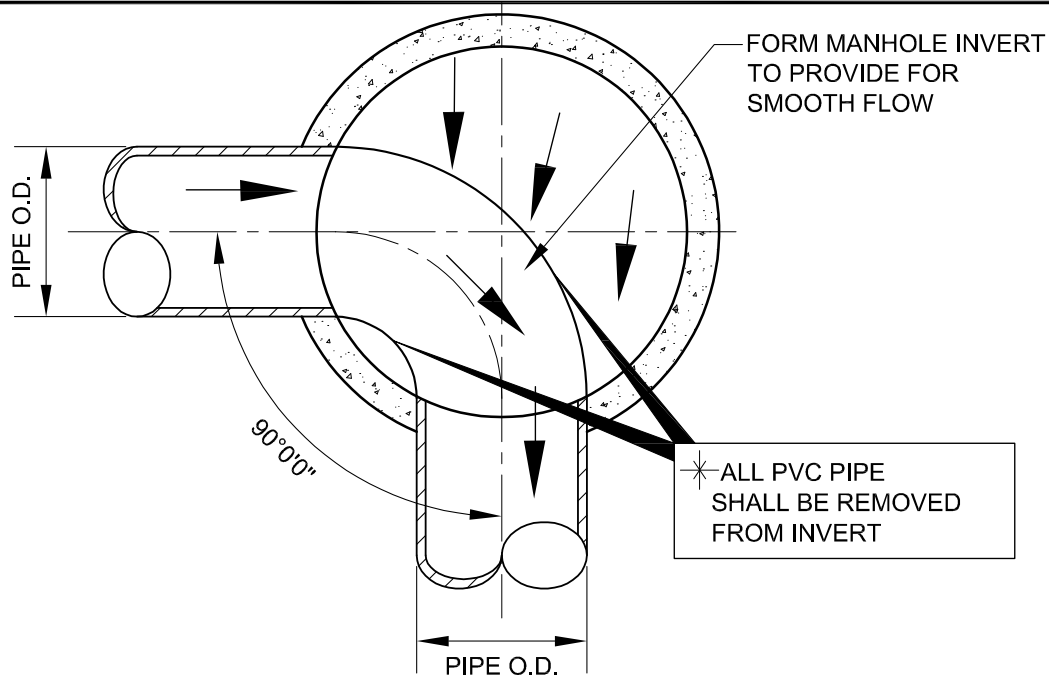
MANHOLE INVERT PLAN

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

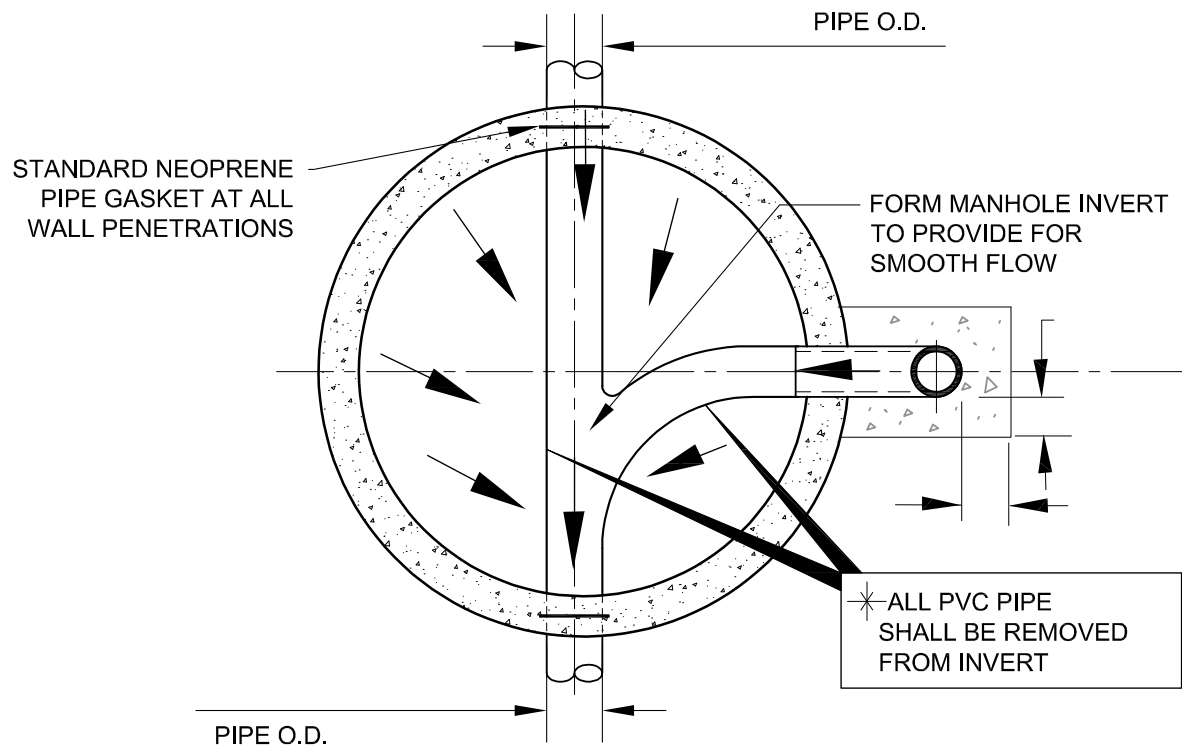
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ADOPTED 11/1/13
REVISED 6/15/15

STANDARD NO.
DET-852-03
2 OF 3



FLOW OF MANHOLE AT 90° BEND



**FLOW OF MANHOLE STRAIGHT THRU
WITH 90° INTERSECTION**

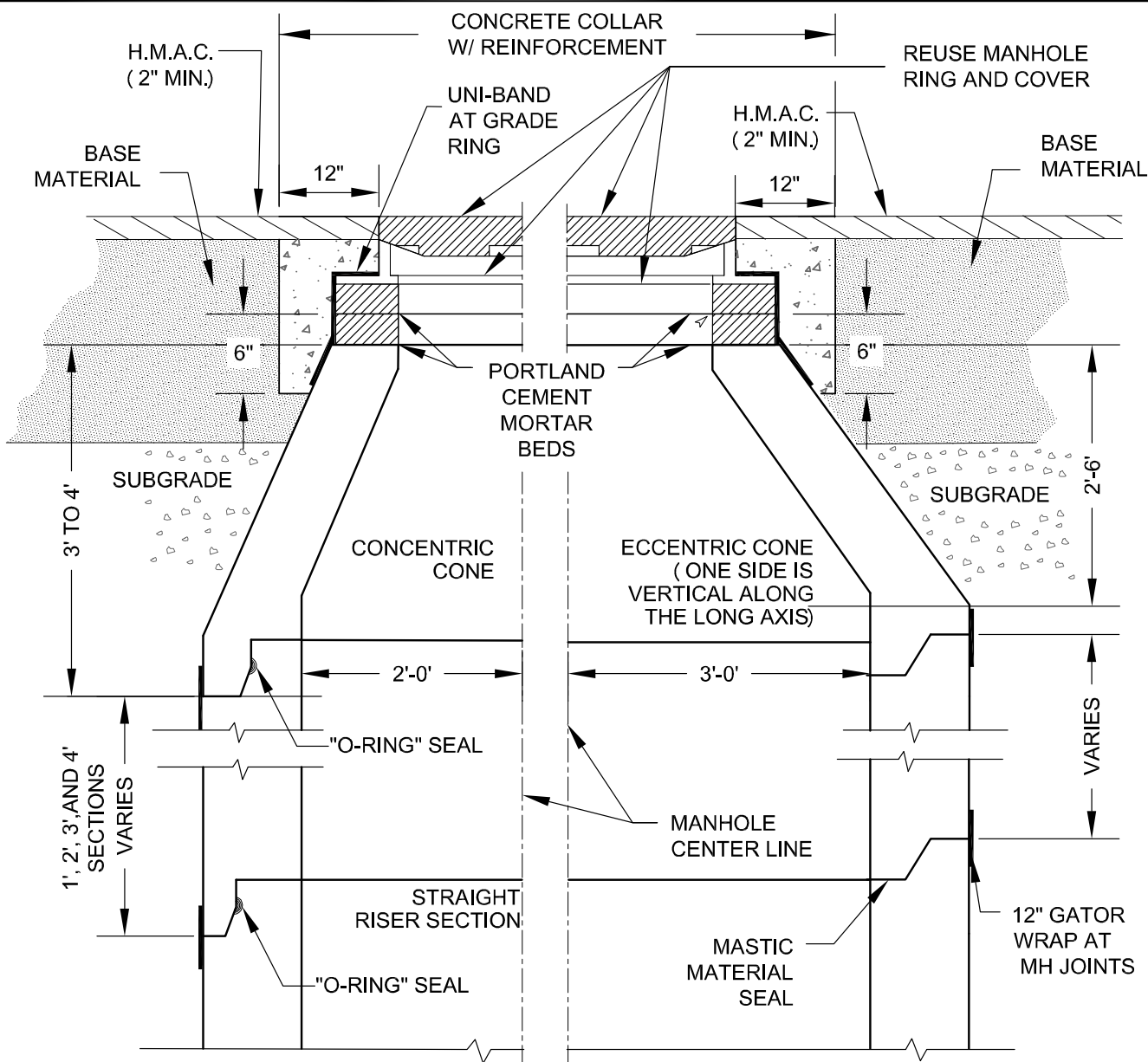


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
MANHOLE INVERT PLAN

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 11/13
REVISED 6/15/15

STANDARD NO.
DET-852-03
3 OF 3



MAJOR MANHOLE ADJUSTMENT

NOTES:

1. MANHOLE SECTIONS TEMPORARILY REMOVED FOR ROADWAY CONSTRUCTION MAY BE REUSED ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER OR INSPECTOR.
2. ANY COMBINATION OF REMOVING THE CONCRETE RINGS, AND/OR THE MANHOLE CONE AND/OR THE STRAIGHT RISER SECTION OF THE MANHOLE SHALL BE ACCEPTABLE TO TEMPORARILY LOWER THE MANHOLE GRADE FOR ROADWAY RECONSTRUCTION.
3. WHILE THE MANHOLE IS TEMPORARILY LOWERED, A SHEET OF METAL SUITABLE TO SUPPORT ALL IMPOSED LOADS, SHALL BE USED TO COVER THE OPENING. THE STEEL PLATE SHALL BE SET IN MORTAR TO PREVENT LEAKAGE.
4. SUBGRADE AND BASE MATERIALS SHALL BE COMPACTED TO 98% AND 95% DENSITIES, RESPECTIVELY. COMPACTION SHALL BE BY MECHANICAL TAMPING TO THE DENSITIES SPECIFIED. CAN BE SUBSTITUTED WITH FLOWABLE FILL.
5. PRIOR TO BACKFILLING, COMPACTING, OR CONCRETE ENCASING, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS, AND GRADE RING SHALL BE WRAPPED WITH GATOR WRAP AND UNI-BAND ACCORDINGLY, INSTALL AS SHOWN ON THE MANHOLE DETAILS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. SEE ITEM 852 FOR ADDITIONAL MATERIAL INFORMATION.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

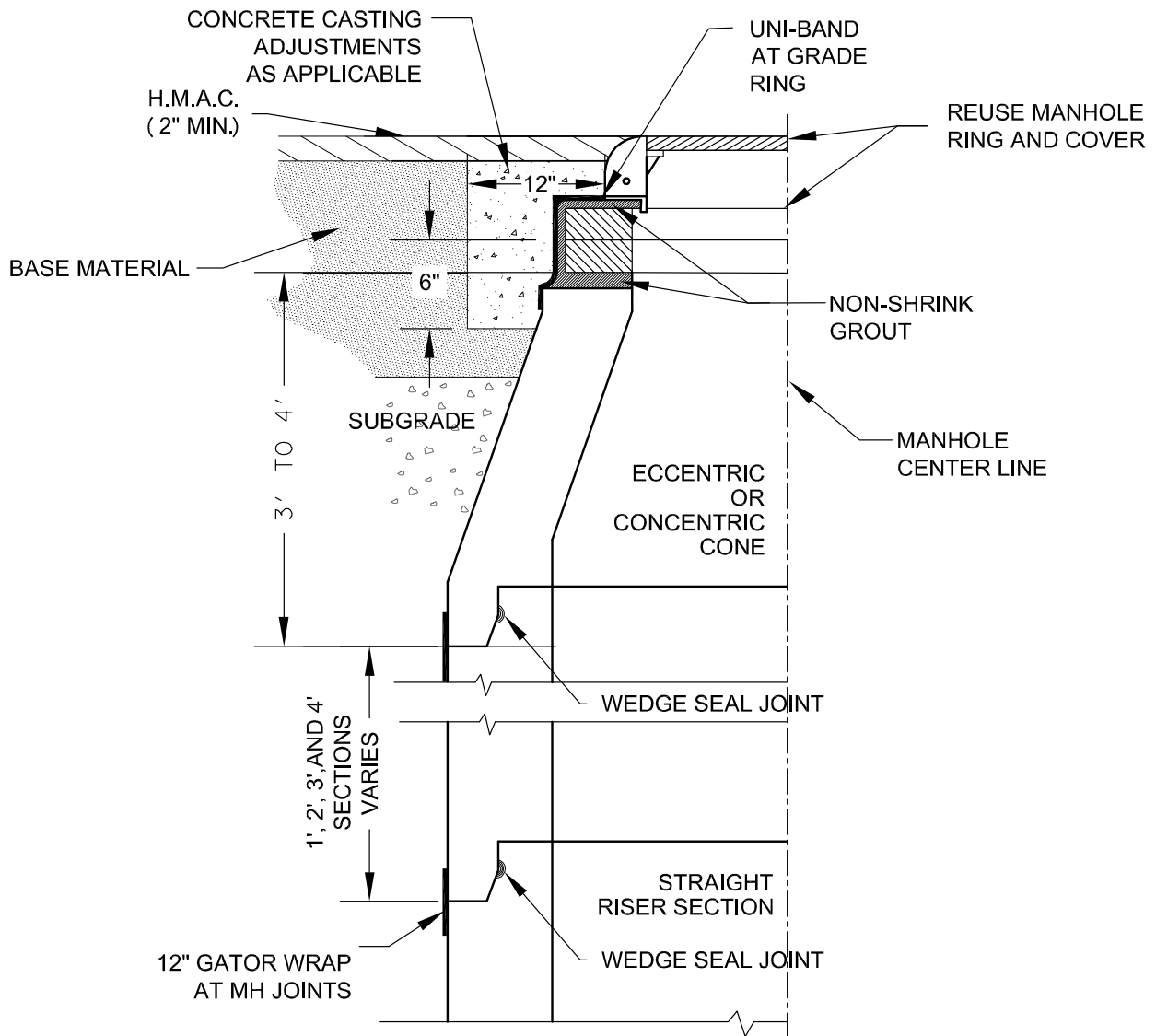
MANHOLE ADJUSTMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.


ADOPTED 8/18/11
REVISED 12/10/15

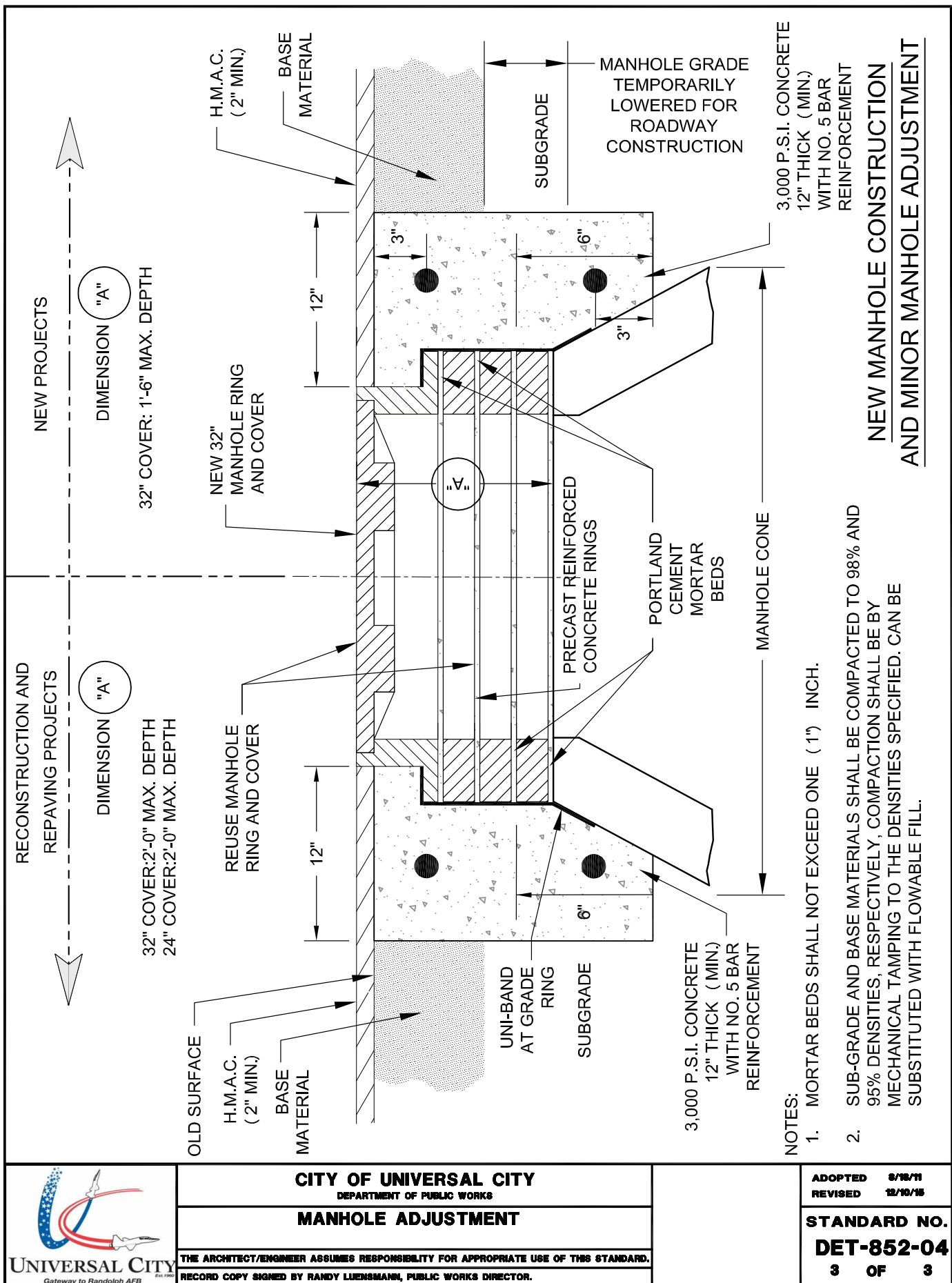
STANDARD NO.
DET-852-04
1 OF 3



NOTES:

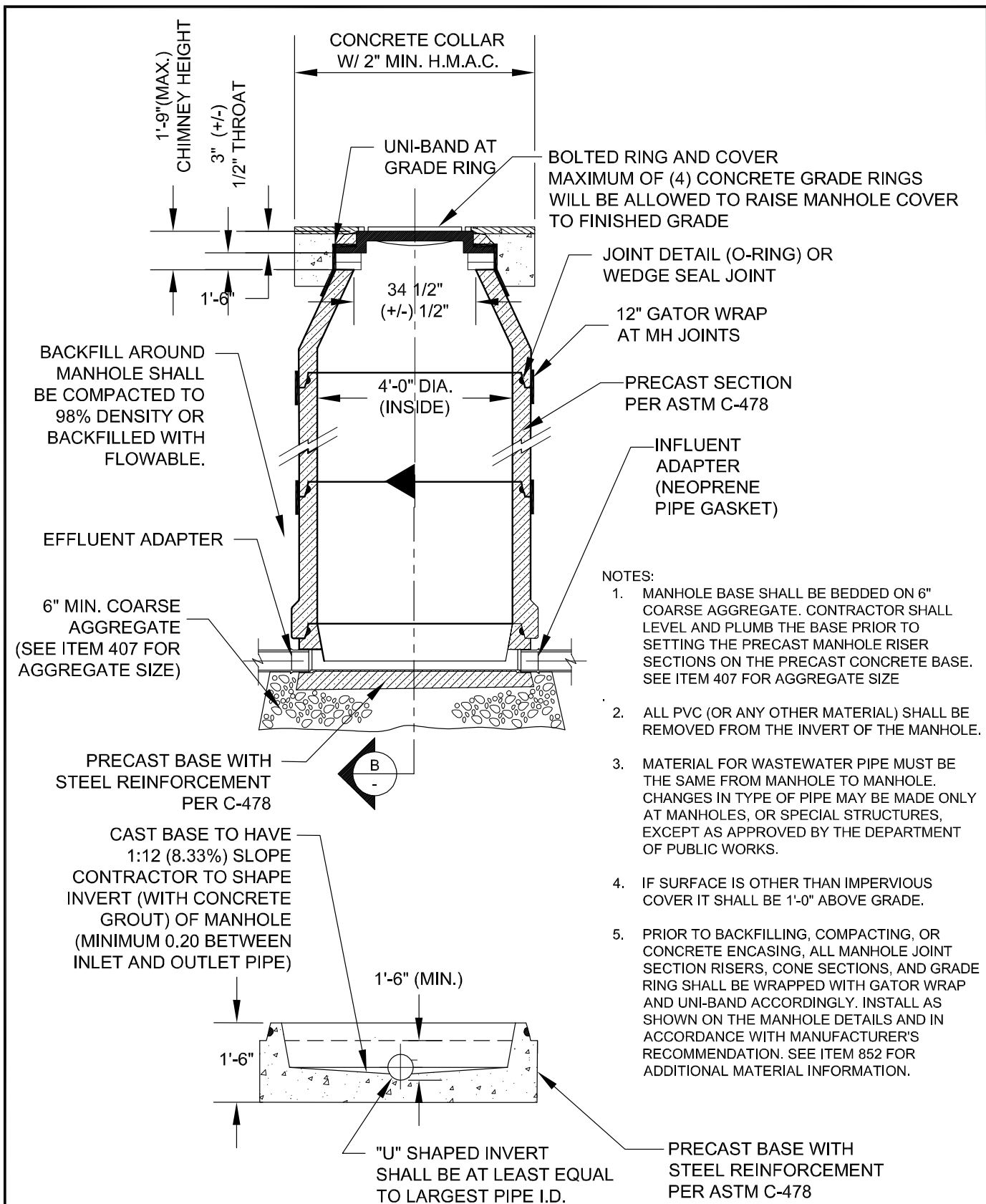
1. FOR CONCRETE COLLAR CLARITY, SEE "MINOR MANHOLE ADJUSTMENT" STANDARD DET-852-04, SHEET 3 OF 3.
2. MANHOLE SECTIONS TEMPORARILY REMOVED FOR ROADWAY CONSTRUCTION MAY BE REUSED, ONLY WITH WRITTEN APPROVAL OF THE ENGINEER OR THE INSPECTOR. WEDGE SEALS SHALL NOT BE REUSED.
3. ANY COMBINATION OF REMOVING THE CONCRETE GRADE RINGS, AND/OR THE MANHOLE CONE, AND/OR THE STRAIGHT RISER SECTION OF THE MANHOLE SHALL BE ACCEPTABLE TO TEMPORARILY LOWER THE MANHOLE GRADE FOR RECONSTRUCTION.
4. WHILE THE MANHOLE IS TEMPORARILY LOWERED, A SHEET OF STEEL SUITABLE TO SUPPORT ALL IMPOSED LOADS SHALL BE USED TO COVER THE OPENING.
5. SUB-GRADE AND BASE MATERIALS SHALL BE COMPACTED TO 98% AND 95% DENSITIES, RESPECTIVELY, COMPACTION SHALL BE BY MECHANICAL TAMPING TO THE DENSITIES SPECIFIED. CAN BE SUBSTITUTED WITH FLOWABLE FILL.
6. PRIOR TO BACKFILLING, COMPACTING, OR CONCRETE ENCASEING, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS, AND GRADE RING SHALL BE WRAPPED WITH GATOR WRAP AND UNI-BAND ACCORDINGLY. INSTALL AS SHOWN ON THE MANHOLE DETAILS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. SEE ITEM 852 FOR ADDITIONAL MATERIAL INFORMATION.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 12/10/15
	MANHOLE ADJUSTMENT		STANDARD NO. DET-852-04
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		2 OF 3

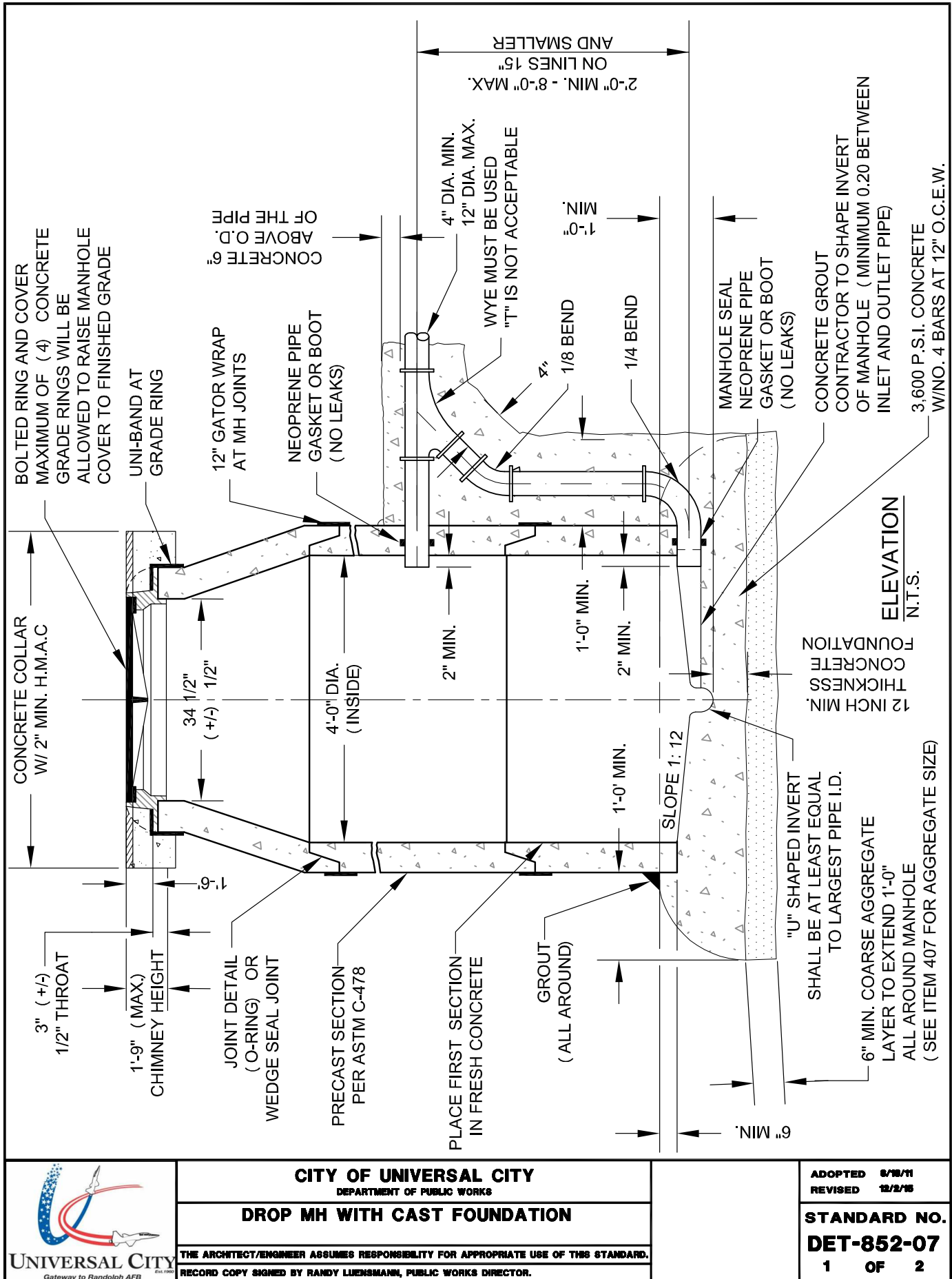


CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
MANHOLE ADJUSTMENT	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED	8/18/11
REVISED	12/10/15
STANDARD NO.	
DET-852-04	
3	OF 3

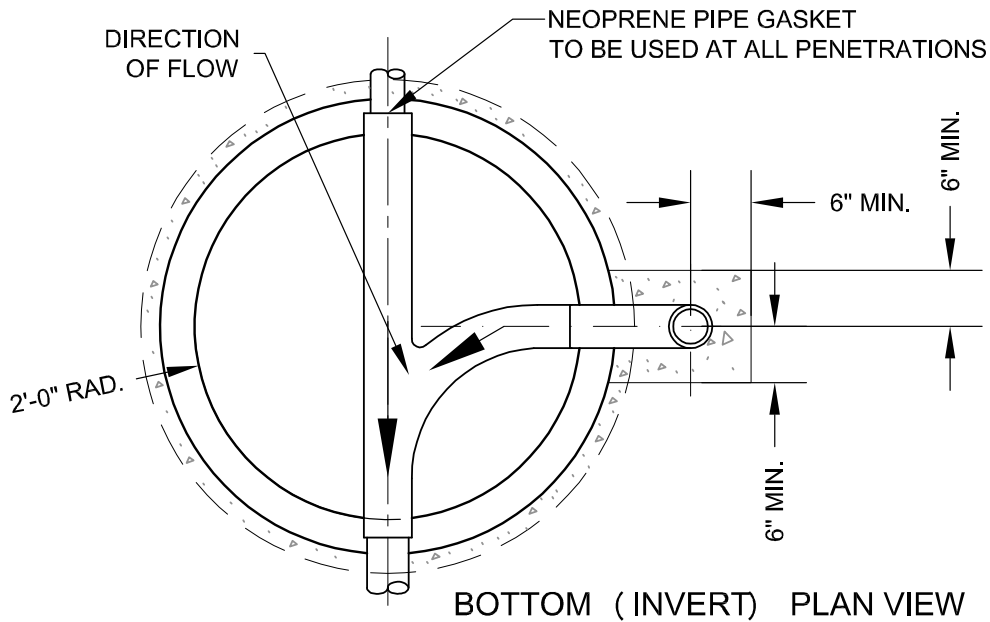


	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 12/2/15
	PRECAST MH WITH PRECAST FOUNDATION		STANDARD NO. DET-852-06
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		1 OF 1
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
DROP MH WITH CAST FOUNDATION	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/18/11 REVISED 12/2/15	STANDARD NO. DET-852-07 1 OF 2
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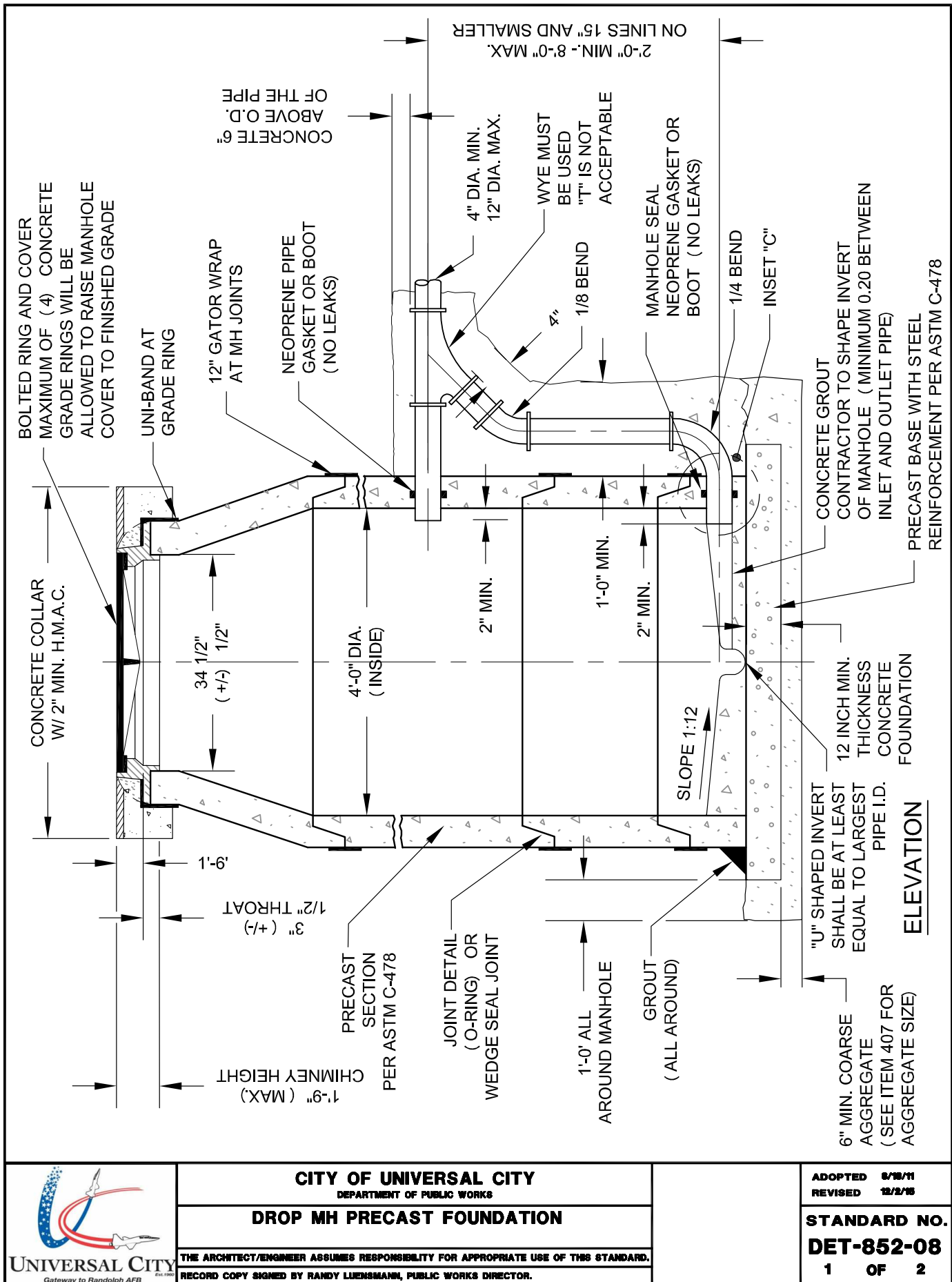
NOTES:

1. THE MANHOLE BASE SHALL BE BEDDED ON 6" COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE. SEE ITEM 407 FOR AGGREGATE SIZE.
2. ALL PVC (OR ANY OTHER MATERIAL) SHALL BE REMOVED FROM THE INVERT OF THE MANHOLE.
3. MATERIAL FOR WASTEWATER PIPE MUST BE THE SAME FROM MANHOLE TO MANHOLE. CHANGES IN TYPE OF PIPE MAY BE MADE ONLY AT MANHOLES, OR SPECIAL STRUCTURES, EXCEPT AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
4. IF SURFACE IS OTHER THAN IMPERVIOUS COVER IT SHALL BE 1'-0" ABOVE GRADE.
5. PRICE FOR FITTINGS AND ENCASEMENT TO BE INCLUDED WITH THE PRICE OF MANHOLE.
6. BACKFILL AROUND MANHOLE SHALL BE COMPACTED TO 98% PER TXDOT STANDARD TEX-113-E. FLOWABLE FILL MAY BE USED TO BACKFILL AROUND MANHOLE.
7. ADAPTORS AND CONCRETE COLLARS SHALL BE USED AS DIRECTED BY THE ENGINEER AND AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
8. THE INVERT DEPTH SHALL BE AT LEAST EQUAL TO THE LARGEST PIPE DIAMETER.
9. STRUCTURES SHALL BE DESIGNED AND INSTALLED ON ALL MAINS GREATER THAN 24" IN DIAMETER.
10. SEE STANDARD DET-852-05 FOR CAST FOUNDATION DETAILS.
11. MANHOLES SHALL BE EITHER MONOLITHIC CAST IN-PLACE OR PRECAST. NO FIBERGLASS MANHOLES ARE ALLOWED. MANHOLES, INCLUDING RINGS AND COVERS, SHALL BE CONSTRUCTED, SO THAT THEY ARE WATERTIGHT. IF PRECAST MANHOLES ARE USED, THE CONTRACTOR SHALL PROVIDE A SUBMITTAL ON THE PRODUCT, GROUT, CONNECTION BOOT, SEALANT AND ANY OTHER APPURTENANCES TO THE CITY OF UNIVERSAL CITY DIRECTOR FOR APPROVAL PRIOR TO INSTALLATION.
12. ALL NEW MANHOLE INTERIOR WALLS SHALL BE COATED WITH A CITY OF UNIVERSAL CITY APPROVED SEWER STRUCTURAL COATING. APPLY A COMBINATION OF CEMENTITIOUS COATING FIRST, FOLLOWED BY THE EPOXY COATING.

CEMENTITIOUS COATING WITH REQUIRED ONE INCH THICK APPLICATION:
 - PERMAFORM CR-5000.
 - STRONG - SEAL MS2C.
 - STANDARD CEMENT MATERIAL INC. RELINER.
 - QUADDEX ALUMINALINER.
 - CONSHIELD BIOTECH ARMOR.

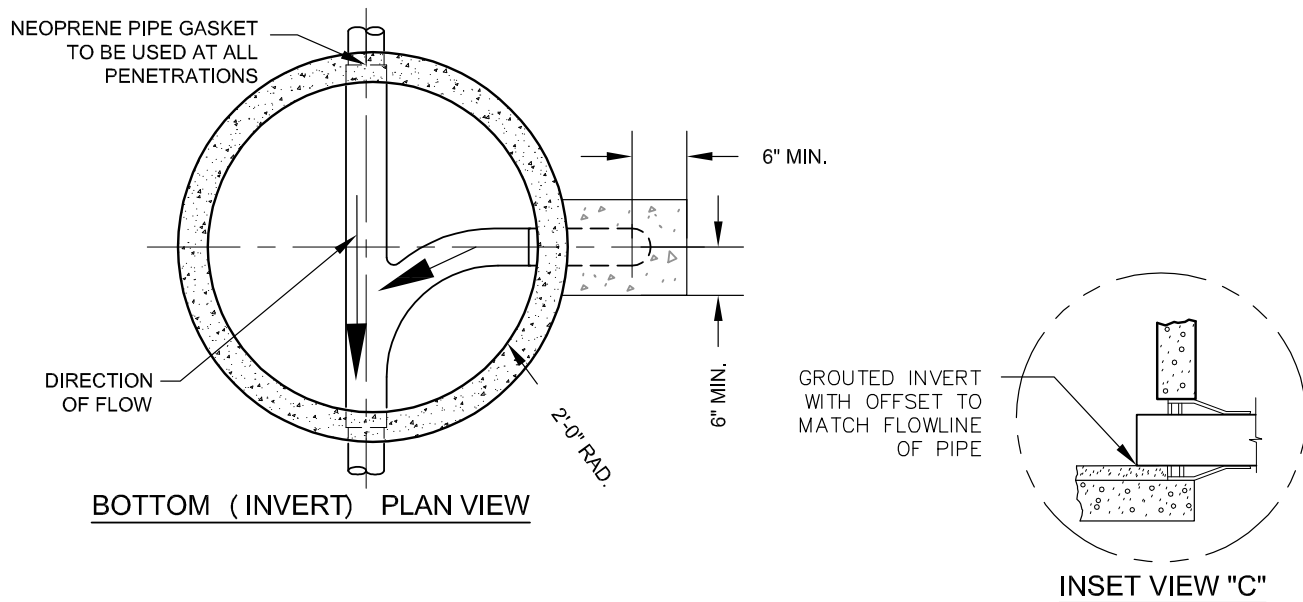
EPOXY COATING WITH SPECIFIED THICKNESS APPLICATION:
 - RAVEN 405 SERIES HIGH BUILD EPOXY LINER: REQUIRED THICKNESS 125 MILS, LIGHT BLUE FINISH.
 - CARBOLINE "PLASITE 4500" SYSTEM: REQUIRED THICKNESS 125 MILS, LIGHT BLUE FINISH.
13. PRIOR TO BACKFILLING, COMPACTING, OR CONCRETE ENCASEING, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS, AND GRADE RING SHALL BE WRAPPED WITH GATOR WRAP AND UNI-BAND ACCORDINGLY. INSTALL AS SHOWN ON THE MANHOLE DETAILS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. SEE ITEM 852 FOR ADDITIONAL MATERIAL INFORMATION.

	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 11/24/16
	DROP MH WITH CAST FOUNDATION		STANDARD NO. DET-852-07
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		2 OF 2
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	
DROP MH PRECAST FOUNDATION	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.	

ADOPTED 8/18/11 REVISED 12/2/15	STANDARD NO. DET-852-08 1 OF 2
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NOTES:

1. THE MANHOLE BASE SHALL BE BEDDED ON 6" COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE. SEE ITEM 407 FOR AGGREGATE SIZE.
2. ALL PVC (OR ANY OTHER MATERIAL) SHALL BE REMOVED FROM THE INVERT OF THE MANHOLE.
3. MATERIAL FOR WASTEWATER PIPE MUST BE THE SAME FROM MANHOLE TO MANHOLE. CHANGES IN TYPE OF PIPE MAY BE MADE ONLY AT MANHOLES, OR SPECIAL STRUCTURES, EXCEPT AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
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7. ADAPTORS AND CONCRETE COLLARS SHALL BE USED AS DIRECTED BY THE ENGINEER AND AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
8. THE INVERT DEPTH SHALL BE AT LEAST EQUAL TO THE LARGEST PIPE DIAMETER.
9. STRUCTURES SHALL BE DESIGNED AND INSTALLED ON ALL MAINS GREATER THAN 24" IN DIAMETER.
10. SEE STANDARD DET-852-06 FOR PRECAST FOUNDATION DETAILS.
11. MANHOLES SHALL BE EITHER MONOLITHIC CAST IN-PLACE OR PRECAST. NO FIBERGLASS MANHOLES ARE ALLOWED. MANHOLES, INCLUDING RINGS AND COVERS, SHALL BE CONSTRUCTED, SO THAT THEY ARE WATERTIGHT. IF PRECAST MANHOLES ARE USED, THE CONTRACTOR SHALL PROVIDE A SUBMITTAL ON THE PRODUCT, GROUT, CONNECTION BOOT, SEALANT AND ANY OTHER APPURTENANCES TO THE CITY OF UNIVERSAL CITY DIRECTOR FOR APPROVAL PRIOR TO INSTALLATION.
12. ALL NEW MANHOLE INTERIOR WALLS SHALL BE COATED WITH A CITY OF UNIVERSAL CITY APPROVED SEWER STRUCTURAL COATING. APPLY A COMBINATION OF CEMENTITIOUS COATING FIRST, FOLLOWED BY THE EPOXY COATING.


CEMENTITIOUS COATING WITH REQUIRED ONE INCH THICK APPLICATION:

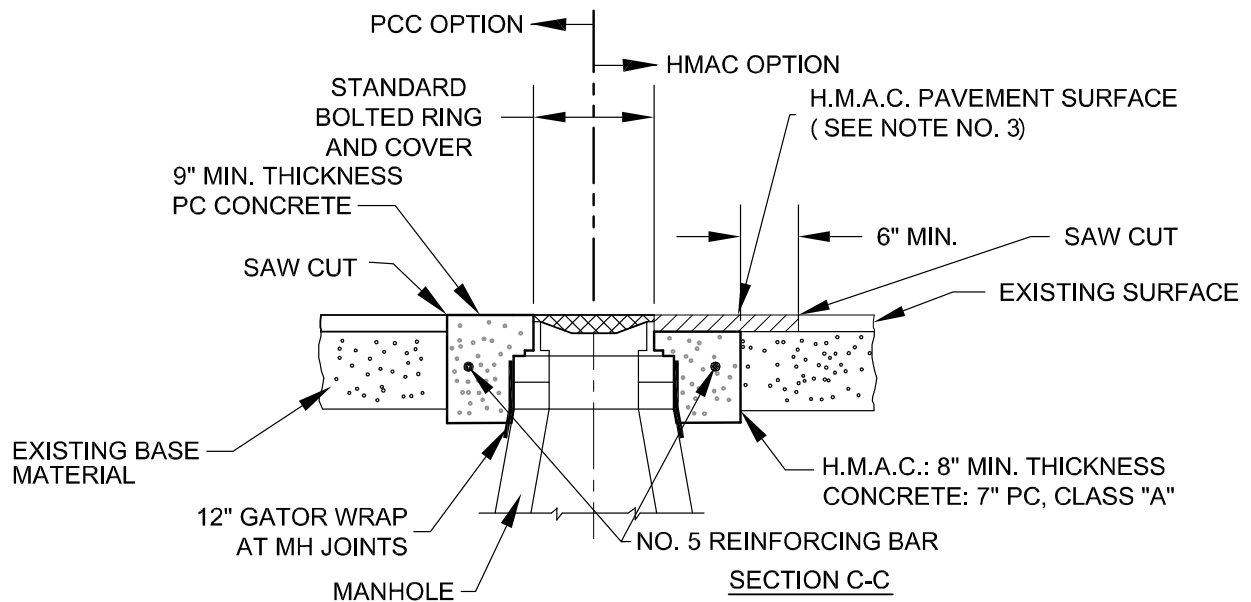
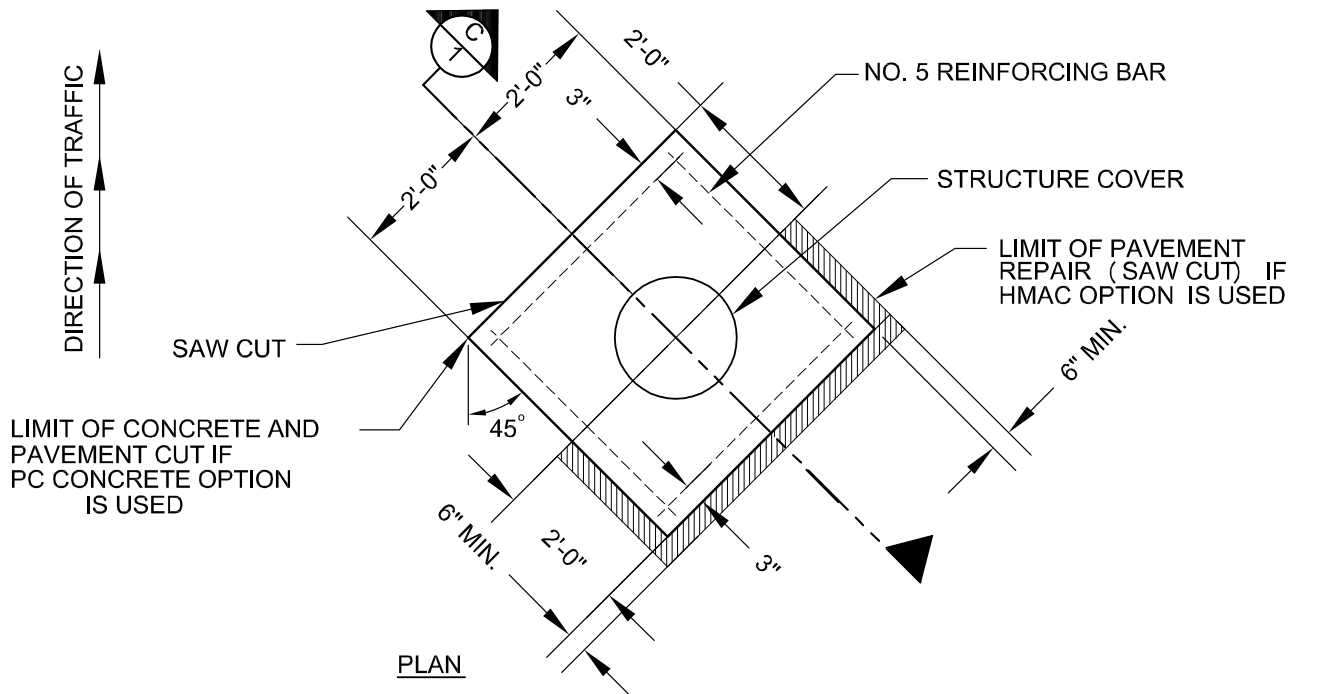
- PERMAFORM CR-5000.
- STRONG - SEAL MS2C.
- STANDARD CEMENT MATERIAL INC. RELINER.
- QUADDEX ALUMINALINER.
- CONSHIELD BIOTECH ARMOR.

EPOXY COATING WITH SPECIFIED THICKNESS APPLICATION:

- RAVEN 405 SERIES HIGH BUILD EPOXY LINER: REQUIRED THICKNESS 125 MILS, LIGHT BLUE FINISH.
- CARBOLINE "PLASITE 4500" SYSTEM: REQUIRED THICKNESS 125 MILS, LIGHT BLUE FINISH.

13. PRIOR TO BACKFILLING, COMPACTING, OR CONCRETE ENCASEMENT, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS, AND GRADE RING SHALL BE WRAPPED WITH GATOR WRAP AND UNI-BAND ACCORDINGLY. INSTALL AS SHOWN ON THE MANHOLE DETAILS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. SEE ITEM 852 FOR ADDITIONAL MATERIAL INFORMATION.

 <p>UNIVERSAL CITY Gateway to Randolph AFB</p>	<p align="center">CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS</p>		<p>ADOPTED 8/18/11</p>
	<p align="center">DROP MH PRECAST FOUNDATION</p>		<p>REVISED 9/21/15</p>
	<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</p>		<p>STANDARD NO.</p>
	<p>RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.</p>		<p>DET-852-08</p>
			<p>2 OF 2</p>



NOTES:

1. CONCRETE SHALL BE CLASS "A", 3,000 P.S.I. MINIMUM.
2. THE CONCRETE SHALL BE REINFORCED WITH NO. 5 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO EDGE OF THE SAW CUT PAVEMENT EDGE.
3. REPLACE H.M.A.C. SURFACE LAYER, SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL:
 - A) 2" MIN. H.M.A.C. TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL
 - B) 3" MIN. H.M.A.C. TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL.

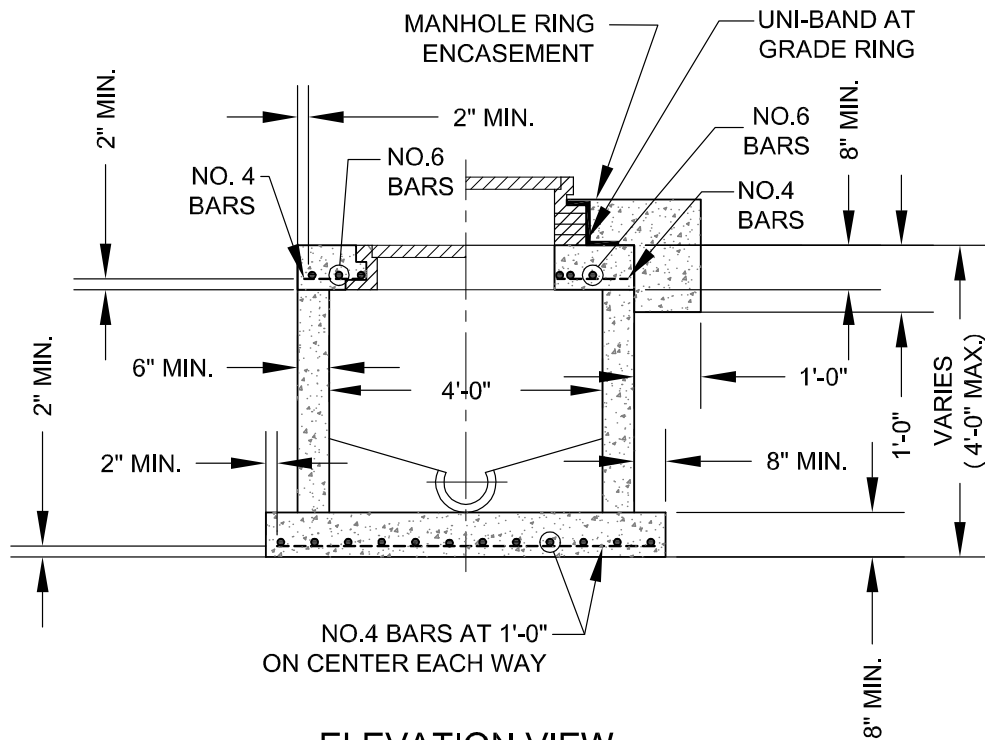
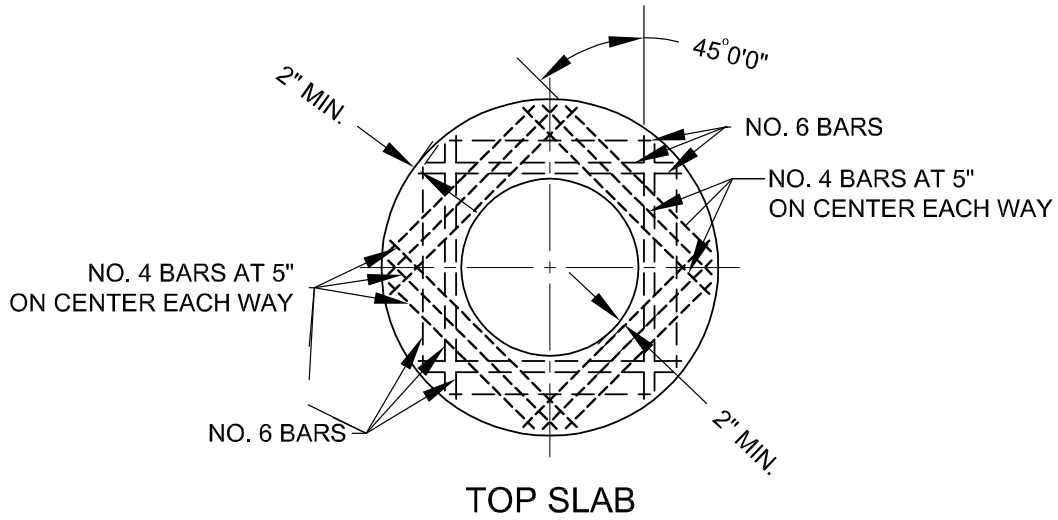


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
CASTING ADJUSTMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 9/12/11
REVISED 9/8/15

STANDARD NO.
DET-852-09
1 OF 1

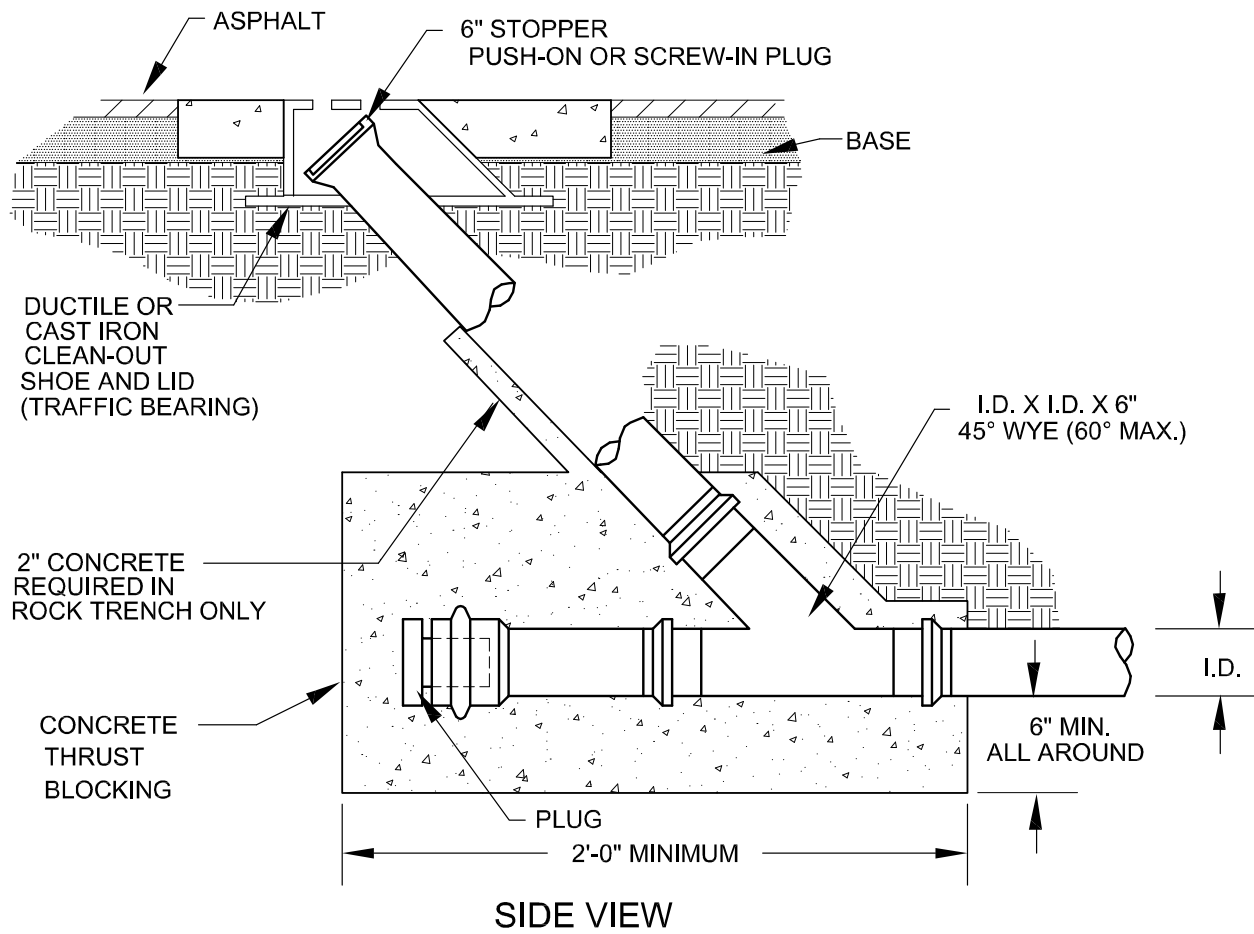
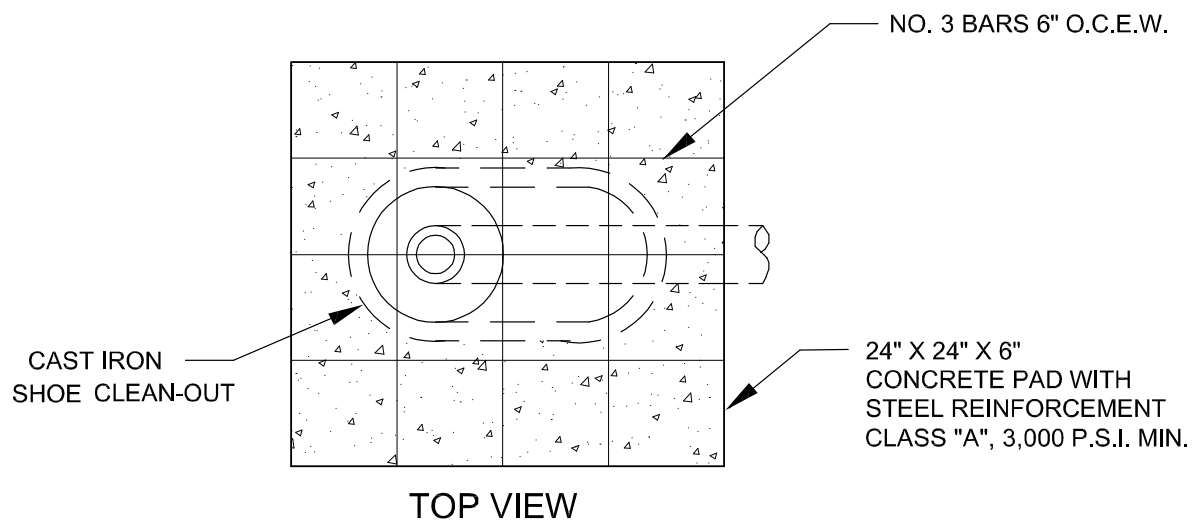


CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
MANHOLE SHALLOW

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 8/18/11
REVISED 9/15/15

STANDARD NO.
DET-852-10
1 OF 1



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS
CLEANOUT (END OF MAIN)

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 8/18/11
REVISED 6/16/16

STANDARD NO.
DET-854-01
1 OF 2

DUCTILE OR CAST IRON CLEAN OUT
SHOE AND LID (TRAFFIC BEARING)
SEE NOTE 2 FOR NEW DEVELOPMENT

THREADED COUPLING AND CAP

PROPERTY
LINE

12"
MIN.

FINISHED GRADE

12" CONCRETE ENCASEMENT
CLASS "A", 3,000 P.S.I. MIN.

6" DIA. OR MAIN LINE DIA.
WHICHEVER IS LESS

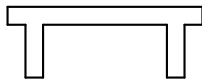
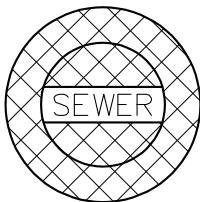
PLUG

SWEEP TEE
I.D.XI.D.X6"

HOUSE

MAIN LINE

CITY
MAIN



DUCTILE OR CAST IRON CLEAN OUT
SHOE AND LID (TRAFFIC BEARING)

NOTES:

1. BACKFILL MATERIAL SHALL BE PLACED IN 6" LIFTS AND COMPACTED. BACKFILL WITH SEWER GRAVEL UP TO THE TOP OF THE 45° BEND.
2. IN NEW DEVELOPMENT, CLEANOUTS SHALL BE INSTALLED ON EACH WASTEWATER CONNECTION (SERVICE) TO EACH LOT DURING CONSTRUCTION. SERVICE LINE SHALL BE CAPPED OR PLUGGED UNTIL PLACED IN SERVICE;
3. CONCRETE SHALL BE CLASS "A", 3,000 P.S.I.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

CLEANOUT (TYPICAL)

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

RECORD COPY SIGNED BY RANDY LUHMANN, PUBLIC WORKS DIRECTOR.

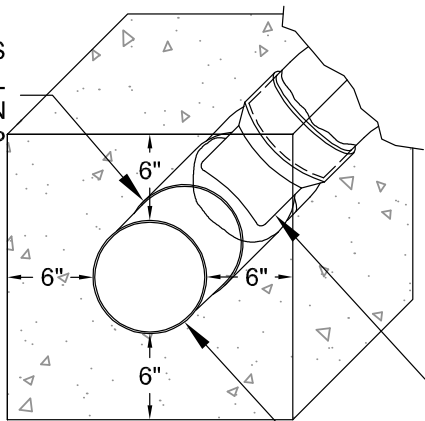
ADOPTED 8/18/11
REVISED 6/18/16

STANDARD NO.

DET-854-01

2 OF 2

STAINLESS
STEEL
CONNECTION
CLAMP



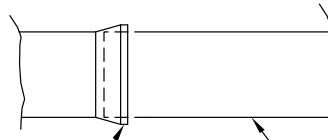
LATERAL
SADDLE

SEWER
MAIN

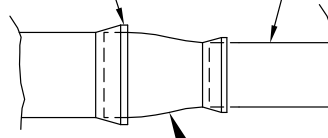
ACCEPTABLE

STUB-OUT

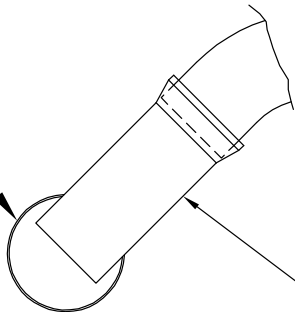
LATERAL



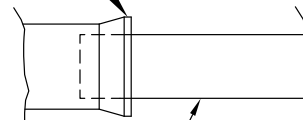
REDUCING
COUPLING



SEWER
MAIN



STUB-OUT

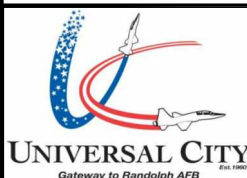


LATERAL

UNACCEPTABLE

NOTE:

1. THE SADDLE SHALL BE PERMANENTLY BONDED TO THE EXISTING MAIN BY THE USE OF COMPOUNDS AND/OR STAINLESS STEEL CLAMPS AS RECOMMENDED BY THE MANUFACTURER.
2. PROVIDE CITY WITH SEWER TAP COUPON.
3. CALL CITY INSPECTOR FOR VISUAL INSPECTION OF SADDLE AND TAP BEFORE ANY CONNECTIONS OR CONCRETE PLACEMENT.



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

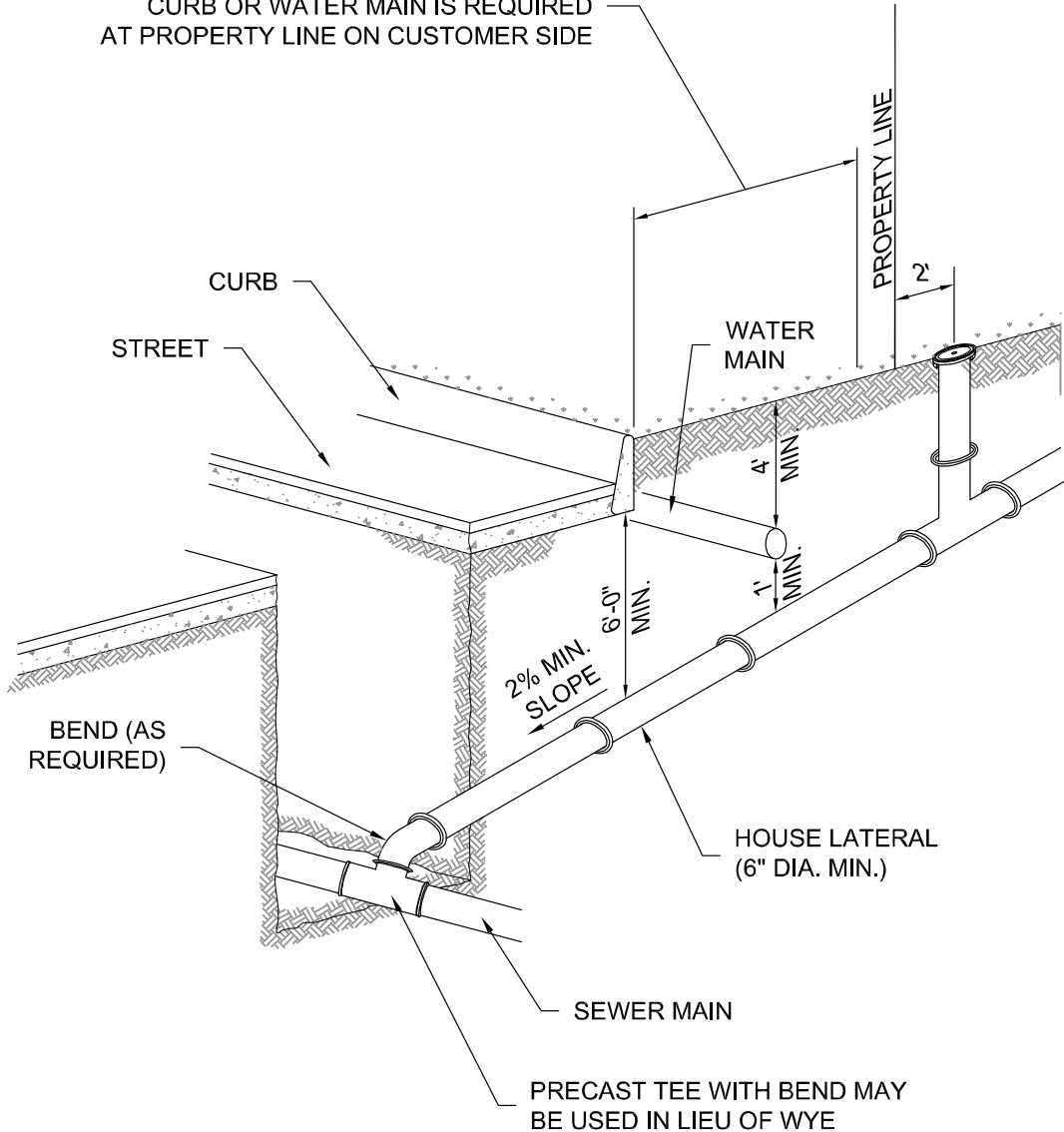
LATERAL CONNECTION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/1/13
REVISED 9/8/15

STANDARD NO.
DET-854-04
1 OF 1

PLACEMENT OF LATERAL 5' BEYOND CURB OR WATER MAIN IS REQUIRED AT PROPERTY LINE ON CUSTOMER SIDE



NOTE:

1. A MINIMUM OF 3' COVER TO SUBGRADE IS NECESSARY, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
2. DEPTH AND GRADE OF SERVICE LATERALS AS SHOWN, ARE TYPICAL ONLY. ACTUAL DEPTH, ALIGNMENT AND GRADE OF SERVICE LATERALS SHALL BE DETERMINED BY THE ENGINEER BASED ON THE ELEVATIONS OF THE SEWER MAIN, STREET, NATURAL GROUND AND BUILDING TO BE SERVICED.



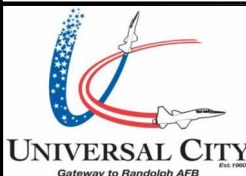
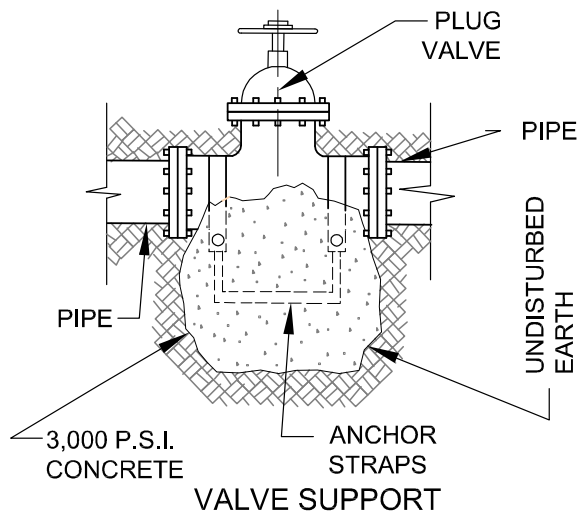
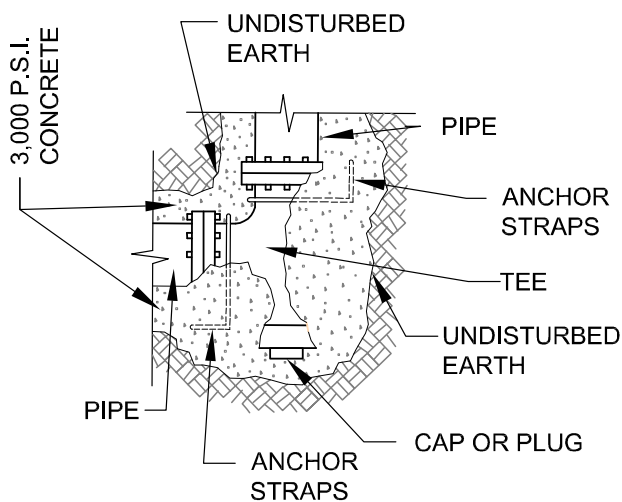
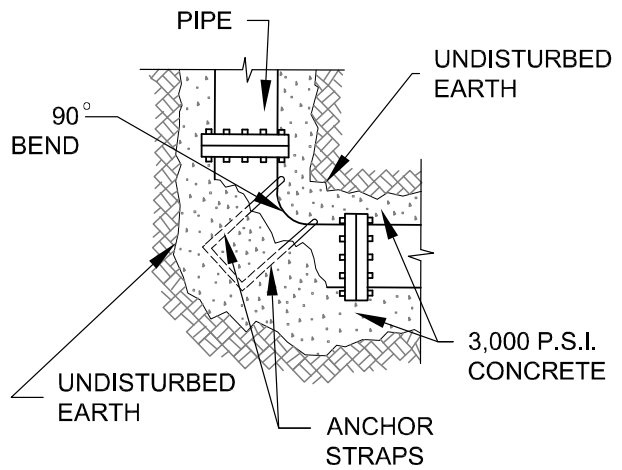
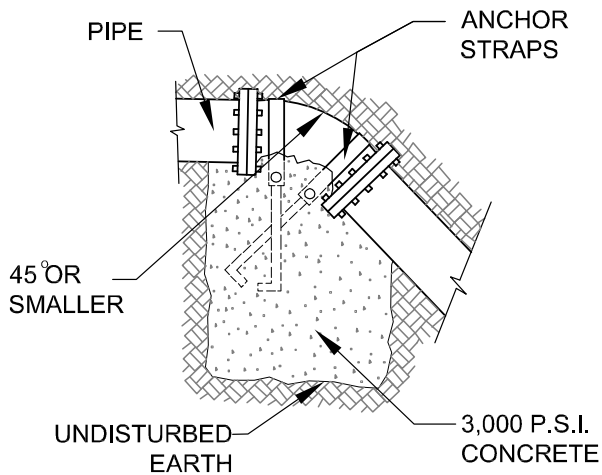
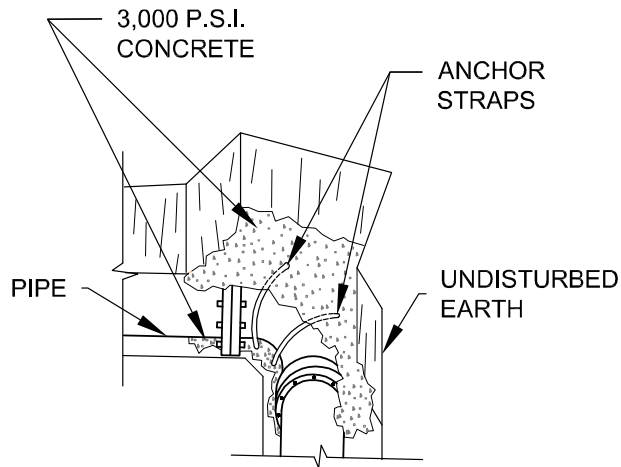
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

HOUSE LATERAL DETAIL

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/1/13
REVISED 12/10/15

STANDARD NO.
DET-854-05
1 OF 1



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

**CONCRETE THRUST BLOCKING
(SEWER ONLY)**


THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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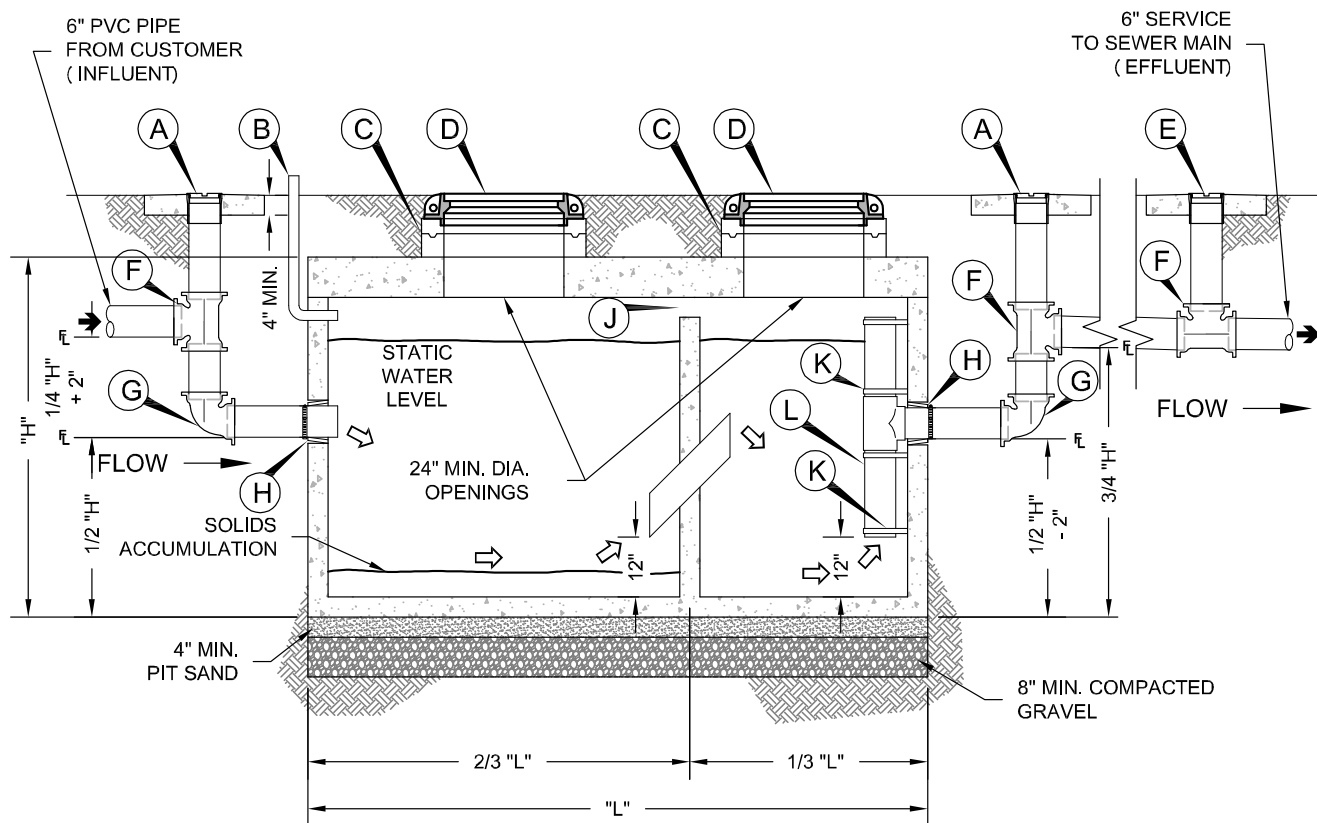
ADOPTED 8/18/11
REVISED 9/25/15

STANDARD NO.
DET-854-06
1 OF 2

NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN STRICT CONFORMANCE WITH APPLICABLE PROVISION OF "STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION".
2. MANHOLE RINGS AND COVER SHALL BE EAST JORDAN IRON WORKS V-1432, OR APPROVED EQUAL. WHEN WATERTIGHT MANHOLE RINGS AND COVERS ARE SPECIFIED, THEY SHALL BE V-1432-3DI "O" RING OR APPROVED EQUAL.
3. MATERIAL FOR WASTEWATER PIPE MUST BE THE SAME FROM MANHOLE TO MANHOLE. CHANGES IN TYPE OF PIPE MAY BE MADE, ONLY AT MANHOLES, OR SPECIAL STRUCTURES, EXCEPT AS APPROVED FROM THE ENGINEER OR THE DEPARTMENT OF PUBLIC WORKS.
4. ADAPTERS AND CONCRETE COLLARS SHALL BE USED ONLY, AS DIRECTED BY THE ENGINEER, AND AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
5. ALL WASTEWATER PIPE WITH LESS THAN THREE (3) FEET OF COVER SHALL BE CONCRETE ENCASED.
6. ALL FORCE MAINS SHALL BE PROVIDED WITH THRUST BLOCKS
 - A. WHERE CHANGES IN DIRECTION OCCUR.
 - B. TEES.
 - C. BENDS.
 - D. CROSS TEES.
 - E. CHANGES IN SIZE.
 - F. STOPS (DEAD ENDS) .
 - G. VALVE.
 - H. AS DIRECTED BY THE ENGINEER AND/OR THE DEPARTMENT OF PUBLIC WORKS.
7. ALL MJ FITTINGS REQUIRE JOINT RESTRAINTS.CONTRACTOR TO INSTALL THRUST BRACING FOR ALL PIPE BENDS/FITTINGS (3" AND GREATER DIAMETER) .


	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 8/18/11 REVISED 9/25/15
	CONCRETE THRUST BLOCKING (SEWER ONLY)		STANDARD NO. DET-854-06 2 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
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TANK SPECIFICATIONS				
GALLONS	"H"	"L"	WIDTH	MAXIMUM BURY DEPTH
1,750	6'-0"	10'-4"	7'-4"	10'-0"
2,000	6'-0"	10'-4"	7'-4"	10'-0"
2,500	6'-0"	12'-2"	8'-6"	10'-0"
3,000	6'-0"	12'-2"	8'-6"	9'-0"
4,000	6'-0"	12'-2"	8'-6"	9'-0"


PARTS DESCRIPTIONS:

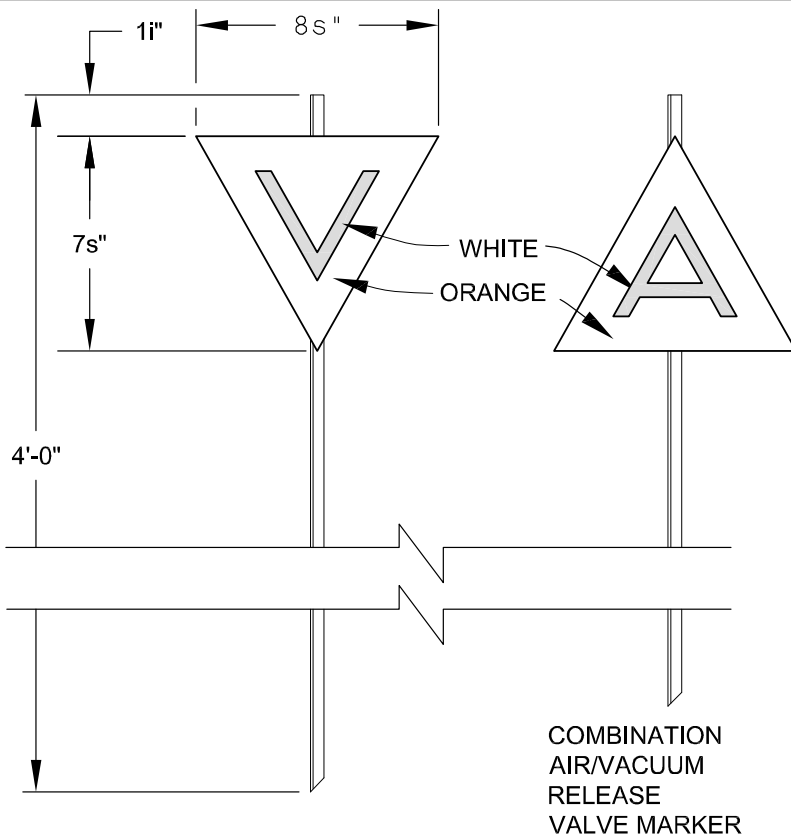
- A. 24" X 24" CONCRETE CLEANOUT PAD W/ 6" (4" MIN.) CLEAN OUT. SEE ADDITIONAL NOTES 10.
- B. 2" VENT PIPE
- C. MANHOLE RISER RINGS TO SUIT COVER DEPTH REQUIRED. BEAD BETWEEN RISER RINGS. SEALANT BETWEEN RISER RINGS AND FRAME AND INTERCEPTOR TOP.
- D. STANDARD 24" MANHOLE FRAME AND LID SEE ADDITIONAL NOTES 1.
- E. 24" X 24" CONCRETE PAD W/ 6" MIN. SAMPLING WELL. SEE ADDITIONAL NOTES 6.
- F. 6" MJ TEE (4" MIN.)
- G. 6" MJ QUARTER BEND (4" MIN.)
- H. KOR-N-SEAL BOOT OR APPROVED EQUAL. SEE ADDITIONAL NOTES 8.
- J. 4" SCHEDULE 80 SOLVENT WELD IN-TANK VENT.
- K. STAINLESS STEEL BANDS AND BOLTS. SEE ADDITIONAL NOTES 2.
- L. 6" SCHEDULE 80 PVC SOLVENT WELD. SEE ADDITIONAL NOTES 2.

 UNIVERSAL CITY Gateway to Randolph AFB	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS		ADOPTED 10/12/11 REVISED 9/25/15
	GREASE TRAP		STANDARD NO. DET-890-01 1 OF 2
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		
	RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		

GREASE INTERCEPTOR ADDITIONAL NOTES:

1. ALL GREASE INTERCEPTORS MUST HAVE A MINIMUM OF TWO COMPARTMENTS. STANDARD 24" MANHOLE FRAMES AND LIDS ARE TO BE INSTALLED CENTERED ON EACH COMPARTMENT.
2. ALL GREASE INTERCEPTORS IN-TANK PIPING MUST BE 6" SCHEDULE 40 PVC SOLVENT WELD, AND IS TO BE SECURED AT THE TOP AND BOTTOM WITH STAINLESS STEEL BANDS AND BOLTS OR PRE-APPROVED EQUAL.
3. IN AREAS WHERE TRAFFIC MAY EXIST, THE INTERCEPTOR SHALL BE DESIGNED TO HAVE ADEQUATE REINFORCEMENT AND COVER.
4. ALL INTERCEPTORS SHALL HAVE THE SIZE OF THE INTERCEPTOR (IN GALLONS PER MINUTE OR GALLON CAPACITY) PERMANENTLY AFFIXED TO THE DEVICE.
5. ALL CONCRETE UTILIZED IN THE CONSTRUCTION OF THE INTERCEPTOR SHALL HAVE A MINIMUM STRENGTH OF 3,000 P.S.I.
6. AN EFFLUENT SAMPLING WELL ON ALL INTERCEPTORS SHALL BE REQUIRED. THE SAMPLE WELL SHALL HAVE A RISER A MINIMUM OF 6" (INCHES) IN DIAMETER AND SHALL BE INSTALLED AFTER THE CONFLUENCE OF ALL WASTE STREAMS FROM THE FACILITY AND PRIOR TO DISCHARGING INTO THE SANITARY SEWER COLLECTION SYSTEM. THE WELL SHALL BE PERPENDICULAR TO THE EFFLUENT LATERAL TO ALLOW VISUAL OBSERVATION OF THE FLOW STREAM AND PROVIDE FOR SAMPLING OF THE WASTE WATER.
7. ALL GREASE INTERCEPTORS MUST BE ACCESSIBLE FOR INSPECTION AND CLEANING AT ALL TIMES.
8. KOR-N-SEALS (OR PRE-APPROVED EQUAL) BOOTS ARE REQUIRED WHERE PIPING PASSES THROUGH THE EXTERIOR INTERCEPTOR WALLS.
9. VENTS ARE TO BE INSTALLED PER 2015 INTERNATIONAL PLUMBING CODE OR LOCAL PLUMBING CODE, LATEST REVISIONS.
10. CLEAN-OUTS USED ON THE EXTERIOR PORTIONS OF THE TANKS SHALL BE 6" MIN. COMBINATION CLEAN-OUTS W/ BRASS COUNTERSUNK PLUGS AND TAPPED FOR 1/4" - 20 SCREWS.
11. MANHOLES ARE REQUIRED WHERE THE EFFLUENT LATERAL CONNECTS TO THE SEWER MAIN.
12. ALL SEWER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS.
13. THE INTERCEPTOR DRAWING IS FOR INFORMATIONAL PURPOSES ONLY. EACH OWNER MUST SUBMIT A DETAILED SITE AND FLOOR PLAN THAT SHOW ALL PLUMBING FIXTURES AND THEIR CORRESPONDING PIPING LAYOUTS. EACH OWNER MUST SUBMIT AN ISOMETRIC PLUMBING RISER THAT SHOWS THE GREASE WASTE PIPING, AS WELL AS, THE OTHER SANITARY BUILDING SEWER DRAINS AND ASSOCIATED PIPING. THE CITY OF UNIVERSAL CITY'S PUBLIC WORKS DEPARTMENT MAY REQUIRE ADDITIONAL INFORMATION AS NEEDED TO EVALUATE THE OWNER'S SUBMITTAL BEFORE FINAL APPROVAL WILL BE GRANTED.
14. ONCE THE OWNER'S SUBMITTAL IS COMPLETE, THE CITY OF UNIVERSAL CITY'S PUBLIC WORKS DEPARTMENT WILL ISSUE A GREASE INTERCEPTOR SIZING AND APPROVAL FORM.
15. THE OWNER MUST PURCHASE A GREASE INTERCEPTOR FROM A MANUFACTURER THAT HAS BEEN PRE-APPROVED BY THE CITY OF UNIVERSAL CITY'S PUBLIC WORKS DEPARTMENT.

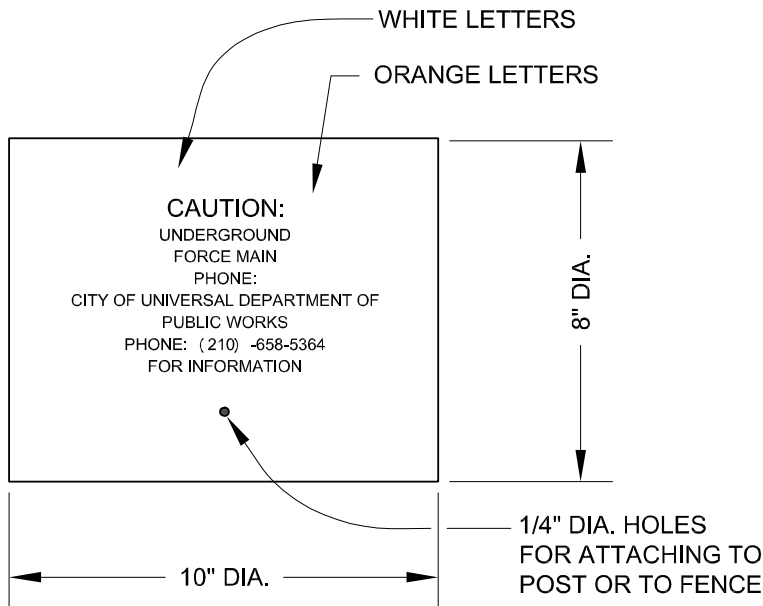
	CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS	ADOPTED 10/12/11 REVISED 9/25/15	
	GREASE TRAP		STANDARD NO. DET-890-01
	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.		2 OF 2



VENT MARKER

NOTES:

1. PLACE VALVE, AIR VALVE AND ACCESS PORT MARKERS AT THE LOCATION OF EACH ITEM.
2. PLACE MARKERS AT EVERY FENCE, ROAD CROSSING AND AT 500' INTERVALS ALONG PIPELINE ROUTE.
3. MARKERS MAY BE CRIMPED TO EXISTING FENCE WIRE OR ATTACHED TO A 1"x1"x1/8"x4' GALVANIZED ANGLE POST.
4. SIGNS SHALL BE 20 GA. WITH BAKED ENAMEL FINISH.



MARKERS SHALL BE OBTAINED FROM :

RURAL WATER SPECIALTY CO.
POST OFFICE BOX 927
TULSA, OKLAHOMA 74101
OR APPROVED EQUAL BY
DEPARTMENT OF PUBLIC WORKS



CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

MARKERS

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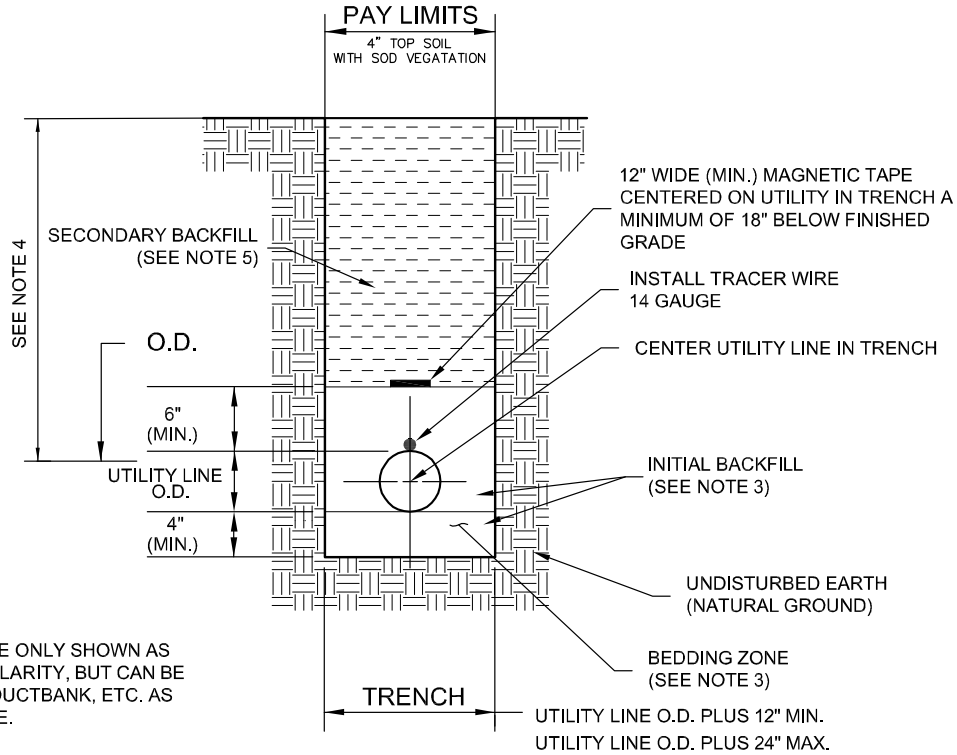
ADOPTED 8/18/11
REVISED 6/15/15

STANDARD NO.
DET-899-01
1 OF 1

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Miscellaneous Details

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NOTE:
UTILITY LINE ONLY SHOWN AS
PIPE FOR CLARITY, BUT CAN BE
CONDUIT, DUCTBANK, ETC. AS
APPLICABLE.

NOTES:

1. INITIAL AND SECONDARY BACKFILL SHALL BE COMPACTED TO 98% PER TXDOT STANDARD TEX-113-E.
2. INITIAL AND SECONDARY MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS UP TO 6 INCHES ABOVE THE UTILITY.
3. INITIAL BACKFILL FOR UTILITY SHALL BE PIT SILICA SAND OR AS DIRECTED.
4. MINIMUM DEPTH OF COVER FOR THE UTILITY SHALL BE AS SPECIFIED ON THE PLANS OR AS DIRECTED.
5. SECONDARY BACKFILL SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM TRENCH, IF SUITABLE, AS APPROVED BY THE CUC PUBLIC WORKS DEPARTMENT. MATERIAL MUST BE FREE OF BRUSH, DEBRIS, AND TRASH. NO ROCKS 3 INCHES OR LARGER.
6. WHEN WORK ONLY INVOLVES UTILITY IMPROVEMENTS OR REPAIR, AND IS NOT PART OF A ROADWAY RECONSTRUCTION OR PROPOSED ROADWAY PROJECT, FLOWABLE FILL IS REQUIRED AS SHOWN ON SHEET 3 OF DET-900-01.
7. SIDEWALKS SHALL BE REMOVED ACROSS ITS ENTIRE WIDTH.
8. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
9. RESTORE SURFACE TO ORIGINAL OR BETTER CONDITION.



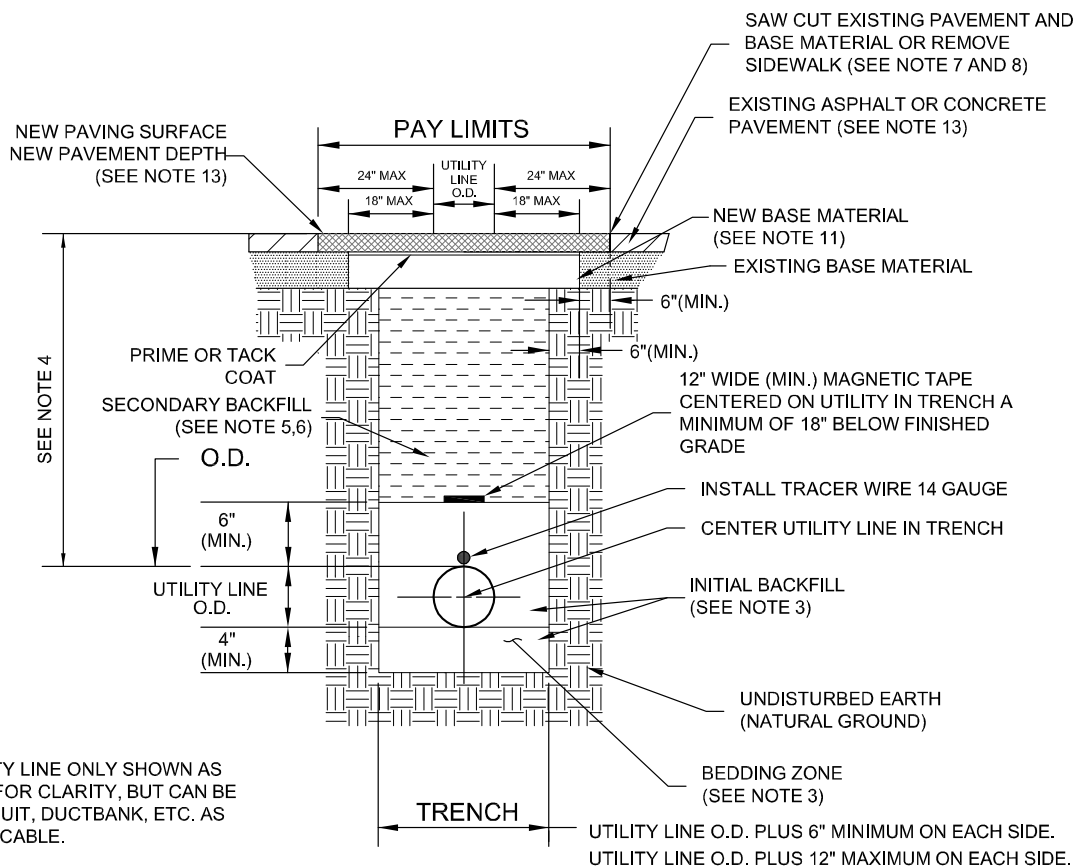
CITY OF UNIVERSAL CITY
DEPARTMENT OF PUBLIC WORKS

**UTILITY TRENCH REPAIR DETAIL FOR
NON-PAVED AREAS**

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
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ADOPTED 11/04/15
REVISED 11/10/15

STANDARD NO.
DET-900-01
1 OF 2



ELEVATION

NOTES:

1. INITIAL BACKFILL SHALL BE COMPACTED TO 98% PER TXDOT STANDARD TEX-113-E.
2. INITIAL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS UP TO 6 INCHES ABOVE THE UTILITY.
3. INITIAL BACKFILL FOR UTILITY SHALL BE PIT SILICA SAND OR AS DIRECTED.
4. MINIMUM DEPTH OF COVER FOR THE UTILITY SHALL BE AS SPECIFIED ON THE PLANS OR AS DIRECTED.
5. WHEN WORK IS PART OF A ROADWAY RECONSTRUCTION OR PROPOSED ROADWAY PROJECT, SECONDARY BACKFILL SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM TRENCH, IF SUITABLE, AS APPROVED BY THE CUC PUBLIC WORKS DEPARTMENT. MATERIAL MUST BE FREE OF BRUSH, DEBRIS, AND TRASH. NO ROCKS 3 INCHES OR LARGER.
6. WHEN WORK ONLY INVOLVES UTILITY IMPROVEMENTS OR REPAIR, AND IS NOT PART OF A ROADWAY RECONSTRUCTION OR PROPOSED ROADWAY PROJECT, FLOWABLE FILL IS REQUIRED.
7. THE EXISTING PAVING SURFACE SHALL BE SAWCUT IN A STRAIGHT LINE, A MINIMUM OF 12 INCHES WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
8. ANY CONCRETE PAVING SHALL BE CUT 6 INCHES WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
9. SIDEWALKS SHALL BE REMOVED ACROSS ITS ENTIRE WIDTH.
10. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
11. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND, OF EQUAL THICKNESS.
12. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 8 INCHES OF BASE OR MATCH EXISTING, WHICHEVER IS GREATER.
13. ASPHALTIC OR CONCRETE PAVEMENT (MATCH EXISTING PAVEMENT TYPE) CONCRETE PAVEMENT TO MATCH EXISTING THICKNESS AND REINFORCING SURFACE PAVEMENT SHALL BE A MINIMUM OF 2-INCHES, WHICH EVER IS GREATER
14. RESTORE SURFACE TO ORIGINAL OR BETTER CONDITION.



CITY OF UNIVERSAL CITY DEPARTMENT OF PUBLIC WORKS

UTILITY TRENCH REPAIR DETAIL FOR ROADWAY AND ALLEY CROSSINGS

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
RECORD COPY SIGNED BY RANDY LUENSMANN, PUBLIC WORKS DIRECTOR.

ADOPTED 11/04/15
REVISED 11/10/15

STANDARD NO.
DET-900-01
2 OF 2